Our Flagstaff

Land Development Code Rewrite: Charrette Summary Report

Flagstaff, Arizona
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Table of Contents

Introduction

Design Principles

Form-Based Code Components

Design Explorations

Introduction A

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Project Overview

Land Development Code Rewrite

On January 6, 2009, the Flagstaff City Council approved a contract for the purpose of restructuring and redrafting the existing City of Flagstaff zoning ordinance to create an innovative and integrated zoning ordinance based on Smart Growth principles.

Objectives of the Land Development Code Rewrite:

1. Is based on sound principles of Smart Growth, mixed-use and sustainable development.
2. Is consistent with the adopted Regional Plan and is coordinated with the future amendments proposed to the Regional Plan.
3. Is logically organized and easy to read and understand.
4. Uses graphics extensively to illustrate key points and minimize the amount of text.
5. Is consistent in terms of processes and requirements.
6. Reduces the number of zoning districts provided in the Code and on the zoning map where possible by combining or removing districts.
7. Involves the public in a meaningful and effective way using appropriate public participation techniques.
8. Is easily expanded and amended in the future to respond to changing market and socio-economic conditions.

Optional Form-Based Code Focus Areas

The focus areas where an optional Form-Based Code could be applied were selected following a citywide (macro-scale) analysis and the solicitation of input from the public through stakeholder interviews and public workshops. The macro-scale analysis found that these areas were close to transit, within walking distance of many retail and civic amenities, and close to job centers such as Northern Arizona University, Downtown and the Flagstaff Medical Center. The community singled out these areas for attention during workshops, stakeholder interviews and focus groups. The areas chosen for Form-Based coding have historically had a high level of walkability and with in-fill development they could encourage a greater level of walkability and transit ridership.

What is the purpose of a zoning ordinance?

The City of Flagstaff's zoning ordinance or Land Development Code (LDC) is adopted in accordance with Arizona Revised Statutes in order to further the legislative intent of "protecting and promoting the public health, safety and general welfare of the citizens of Flagstaff, providing for orderly growth", etc. (LDC Division 10-01-002). The purpose of the LDC is further established in Division 10-01-003, and may be summarized as:

- Furthering the legislative intent, i.e. protecting the public health, safety and general welfare of the citizens of Flagstaff;
- Organizing all the regulations for the development of land within the City;
- Organizing the regulations in "a form which is comprehensive, straightforward, and easily understood and usable";
- The implementation of the adopted General Plan (i.e. Flagstaff Area Regional Land Use and Transportation Plan or "Regional Plan").

What is a Form-Based Code/Zoning?

"Form-based codes foster predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code. These codes are adopted into city or county law as regulations, not mere guidelines. Form-based codes are an alternative to conventional zoning" - The Form Based Code Institute

Links to more information on Form-Based Codes:

http://www.opticosdesign.com

http://www.formbasedcodes.org/fbcbook.html

Existing conditions: base plan with building footprints, blue outline of the focus area for the charrette.

Flagstaff Townsite

The historic neighborhood of Flagstaff Townsite has a mix of small houses, duplexes and small apartment buildings, in a single-family character and scale. The charrette calls for continued preservation of the scale and character of the neighborhood through bringing the zoning in line with the Historic Preservation Overlay standards.

North of Downtown

The North of Downtown neighborhood, defined by the parcels on the west side of Leroux Street to the east side of San Francisco Street from Columbus Street to Dale Street has a single-family character. In the late 1990s the neighborhood worked to change its zoning to preserve this character. The Charrette Plan and the Form-Based Code will build upon these efforts and preserve the single-family scale and character of the neighborhood.

Humphreys and Beaver Street Corridors

Humphreys Street and Beaver Street north of Downtown have become retail and professional office corridors providing services to the City and tourists. The Charrette Plan calls for these corridors to maintain a residential scale and character of buildings while allowing a diverse mix of uses. The Form-Based Code regulates the spatial transition from the mixed-use corridor back to the North of Downtown single-family neighborhood.

Southside

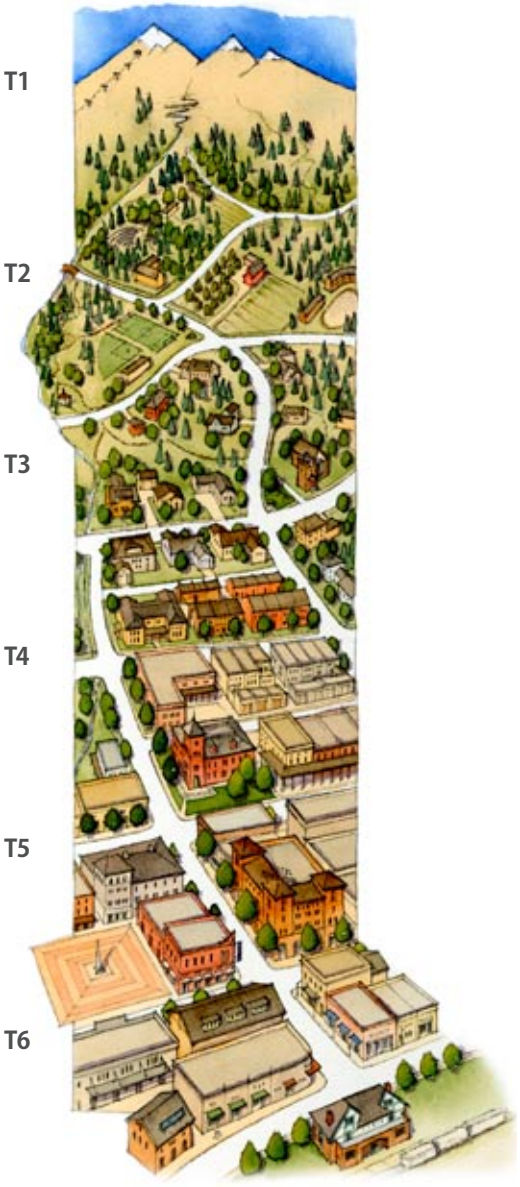
The eclectic Southside between Downtown and Northern Arizona University Campus is a mix of small retail buildings, historic motels, small single-family residences and medium-density buildings. The Charrette Plan and the Form-Based Code will allow the implementation of the community's vision as set forth in The Southside 2005 Plan Strategies for D*evelopment,* completed by Field Paoli in 2005.

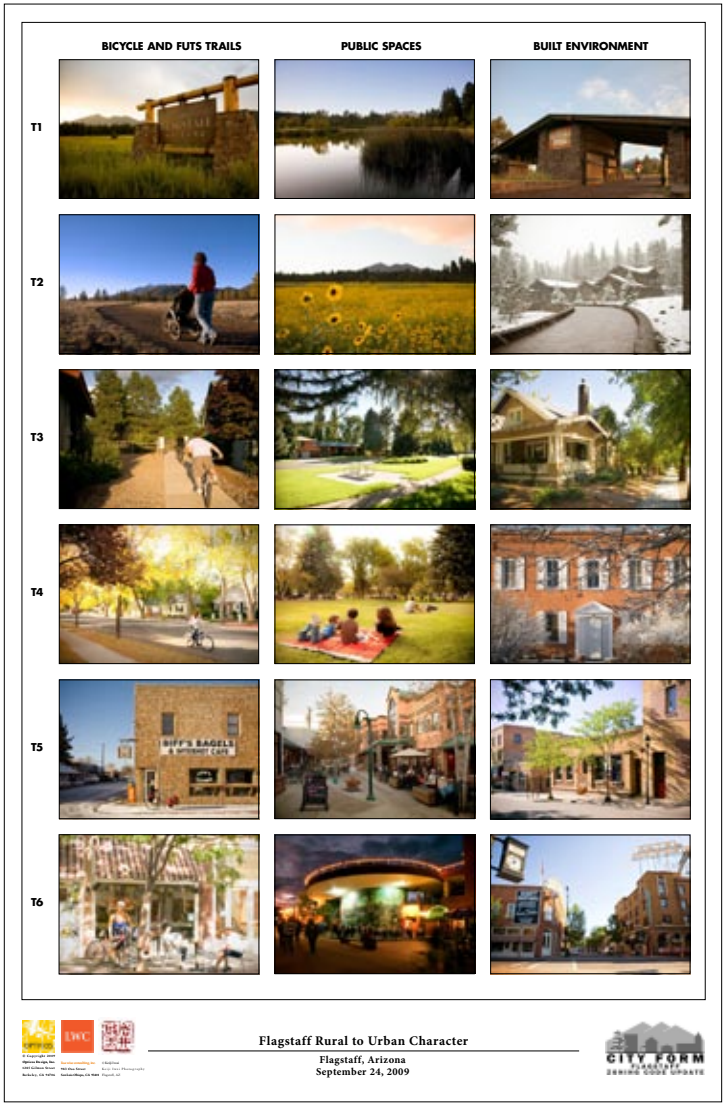
The Downtown

The Charrette Plan and Form-Based Code will build upon the strong core of retail and restaurants in the Downtown by proposing the addition of residential units within the Downtown. The plan calls for in filling and redeveloping under utilized properties to create a mixed use neighborhood with a clearer presence along Route 66 and Humphreys Street. The Downtown Management Plan that the City is currently drafting will be essential to the future evolution of the Downtown into a complete neighborhood.

Plaza Vieja

The northernmost portion of the Plaza Vieja neighborhood was included in the Focus Area. Kimberly Sharp, AICP, Neighborhood Planner, brought her knowledge and experience working with the neighborhood to the charrette and worked on potential application of the Form-Based Code to the neighborhood. It is anticipated that a Form-Based Code will be applied to the rest of the Plaza Vieja neighborhood after the Neighborhood plan is completed and adopted.

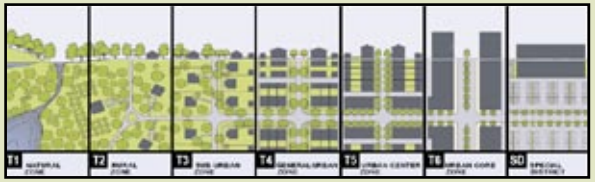




These images describe the rural to urban transect as it exist currently in Flagstaff.

The Flagstaff Transect

As part of the Land Development Code Rewrite the consultant team built upon the work of the City staff in defining and refining the Flagstaff Transect. The Traditional Neighborhood District Chapter of the existing Land Development Code served as the basis for the refinements made by the consultant team. Extensive documentation was completed to document different elements of the urban form of different Transect zones. Each Transect zone, or T-Zone, has been designated a number. The higher numbers designate progressively more urban zones; the lower, more rural.



What is the Rural-to-Urban Transect?

The rural-to-urban Transect is a means for considering and organizing the human habitat in a continuum of intensity that ranges from the most rural condition to the most urban. It provides a standardized method for differentiating between the intentions for urban form in various areas using gradual transitions rather than harsh distinctions. The zones are primarily classified by the physical intensity of the built form, the relationship between nature and the built environment, and the complexity of uses within the zone.

While the origin of the Transect as a concept is in the biological and environmental analysis fields, it was first described and adapted for the purposes of Form-Based Coding by Duany Plater-Zyberk & Company (DPZ). The DPZ model Transect provides six zones: Natural (T1), Rural (T2), Sub-urban (T3), General Urban (T4), Urban Center (T5), and Urban Core (T6), together with a Special District (SD) designation for areas with specialized purposes (e.g., heavy industrial, transportation, entertainment, or university districts, among other possibilities). Each Transect zone, or T-Zone, has been designated a number. The higher numbers designate progressively more urban zones; the lower, more rural.

Further information on the Rural-to-Urban Transect is available at:

http://www.transect.org/

Public Participation

Pre-Charrette Public Outreach

Working with City staff, the consultant team began the Land Development Code Rewrite process with an extensive public outreach process.

Stakeholder Interviews

Input from a range of stakeholders is essential in developing a land development code that meets the needs and expectations of the community of Flagstaff. The sessions provided a formal setting to gather feedback from stakeholders representing a variety of interests.

Stakeholder interviews were conducted over the course of three days (May 6, 7, and 8, 2009). A total of 59 people were interviewed in 53 interview sessions. Interviews were conducted by eight members of the Consulting Team and lasted approximately 30 minutes each.

For a copy of the Stakeholder Interview Analysis Summary see

www.flagstaff.az.gov/DocumentView.aspx?DID=9479

Documentation and Analysis

In an effort to gain a better understanding of the City of Flagstaff the consultant team analyzed the City at the macro (citywide) and micro (block and lot) scales.

By analyzing the City as a whole, the consultant team gained an understanding of its physical, natural and man-made infrastructure opportunities and constraints. This information informed the decision-making process for selecting the areas best suited for an Form-Based Code.

For a copy of the Macro Scale Analysis see

http://www.flagstaff.az.gov/DocumentView.aspx?DID=9481

The consultant team worked with City staff and members of the public to documents several blocks in the Focus Areas and gain a better understanding of the components that make Flagstaff's neighborhoods unique. This information will help refine the standards set forth in the Form-Based Code.

For a copy of the Micro Scale Analysis see

http://www.flagstaff.az.gov/DocumentView.aspx?DID=9747

Focus Groups

Running in parallel with the efforts of the consultant team, the City staff, led by Roger Eastman, AICP, Zoning Code Administrator, conducted eleven individual Focus Groups that formed recommendations for updates to the Land Development Code. The information compiled will help direct the consultant team and City staff as the Land Development Code Rewrite proceeds.

For a copy of the Focus Group Summary see

http://www.flagstaff.az.gov/DocumentView.aspx?DID=9608

Charrette

As part of the planning process, a four-day public charrette was held at Flagstaff Federated Community Church to enable the community to direct the long-term vision and rezoning that will reinforce the vision and ensure a predictable implementation. Over 400 different people participated and attended the various charrette events.

- The charrette kicked off with an opening presentation at City Hall, where participants were given an overview of the work the consultant team and City staff had done leading up to the charrette and an outline of what would be done during the week.
- The studio was opened up Tuesday through Thursday for the public to come by and talk to the consultant team.
- Three lunchtime brown-bag presentations were given to discuss important topics that related to the charrette and Land Development Code rewrite.
- Two evening open houses were held to discuss the day's work.
- A closing presentation was held at City Hall on Friday evening, where the work completed during the week was presented and discussed.

Public participation during charrette process

	Monday October 5th, 2009	Tuesday October 6th, 2009	Wednesday October 7th, 2009	Thursday October 8th, 2009	Friday October 9th, 2009
8:00 AM					
9:00 AM		Studio Open to Public	Studio Open to Public	Studio Open to Public	Studio Closed to public
10:00 AM					
11:00 AM					
12:00 PM		Brown Bag Lunch Presentation: RH-Complete Streets	Brown Bag Lunch Presentation: LW-Code	Brown Bag Lunch Presentation: EZ/BS-Sustainability	
1:00 PM					
2:00 PM				Studio Closed to public	
3:00 PM					
4:00 PM					
5:00 PM					
6:00 PM	Opening Presentation	Public Open House	Southside Neighborhood Public Open House		Closing Presentation
7:00 PM					

Opening Presentation		Studio Open to Public	DP	Dan Parolek	EZ	Eric Zickler
Brown Bag Lunch Open to Public		Studio Closed to Public	LW	Lisa Wise	BS	Bry Sarté
Public Open House			RH	Rick Hall		

Schedule of community involvement opportunities during charrette week

What is a Charrette?

A charrette as defined by the National Charrette Institute is "a multiple-day collaborative design and planning workshop held on-site and inclusive of all affected stakeholders".

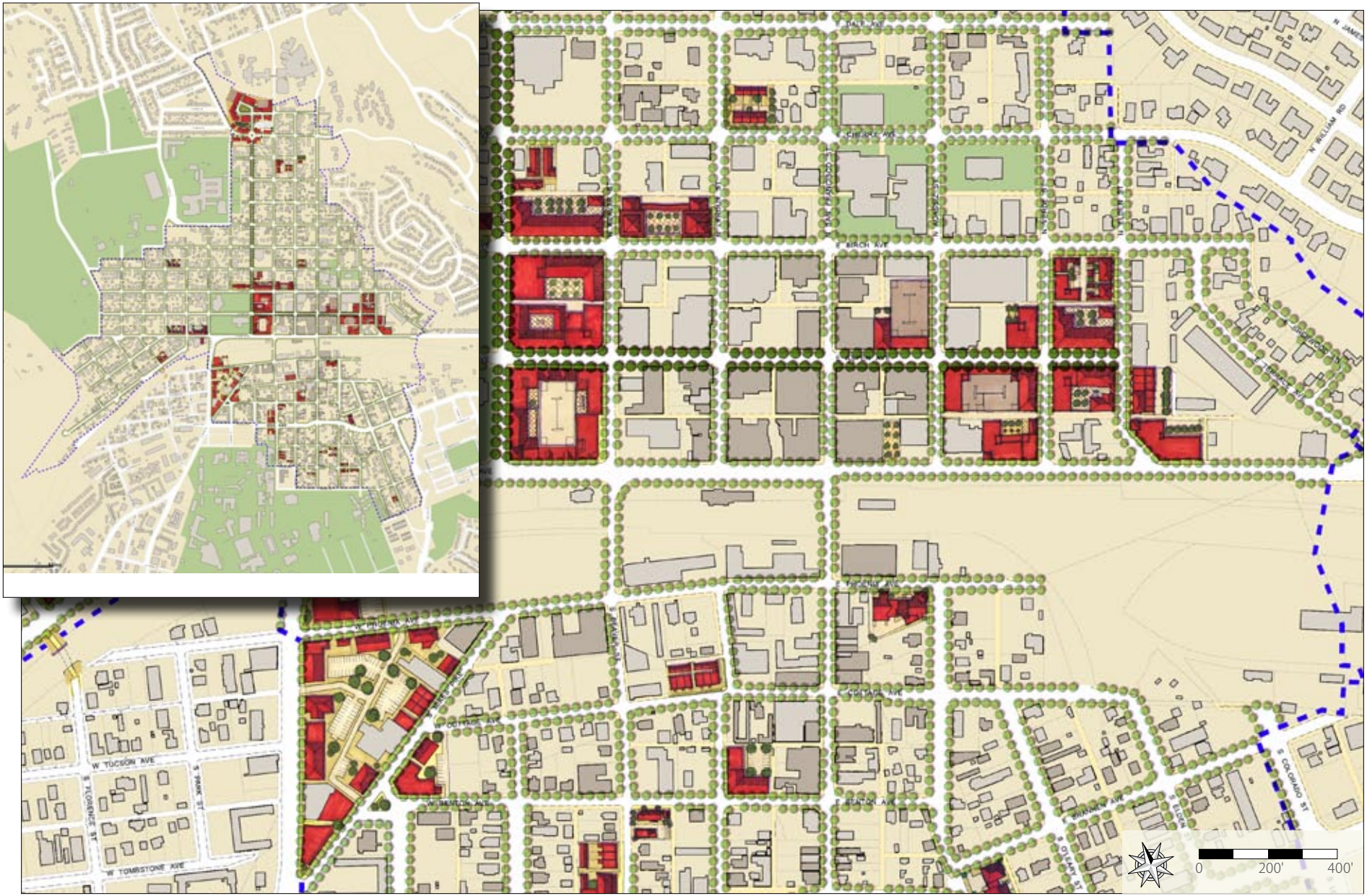
A charrette facilitates citizens, designers and others to collaborate on a vision for development by providing a forum for ideas and designs. It offers the unique advantage of feedback loops, where the community can give immediate feedback to the designers. This allows the design team and the public to work with one another on the vision in a short amount of time and build consensus. More importantly, it allows everyone who participates to be a mutual author of the plan.

Further information on charrettes is available at the NCI website:

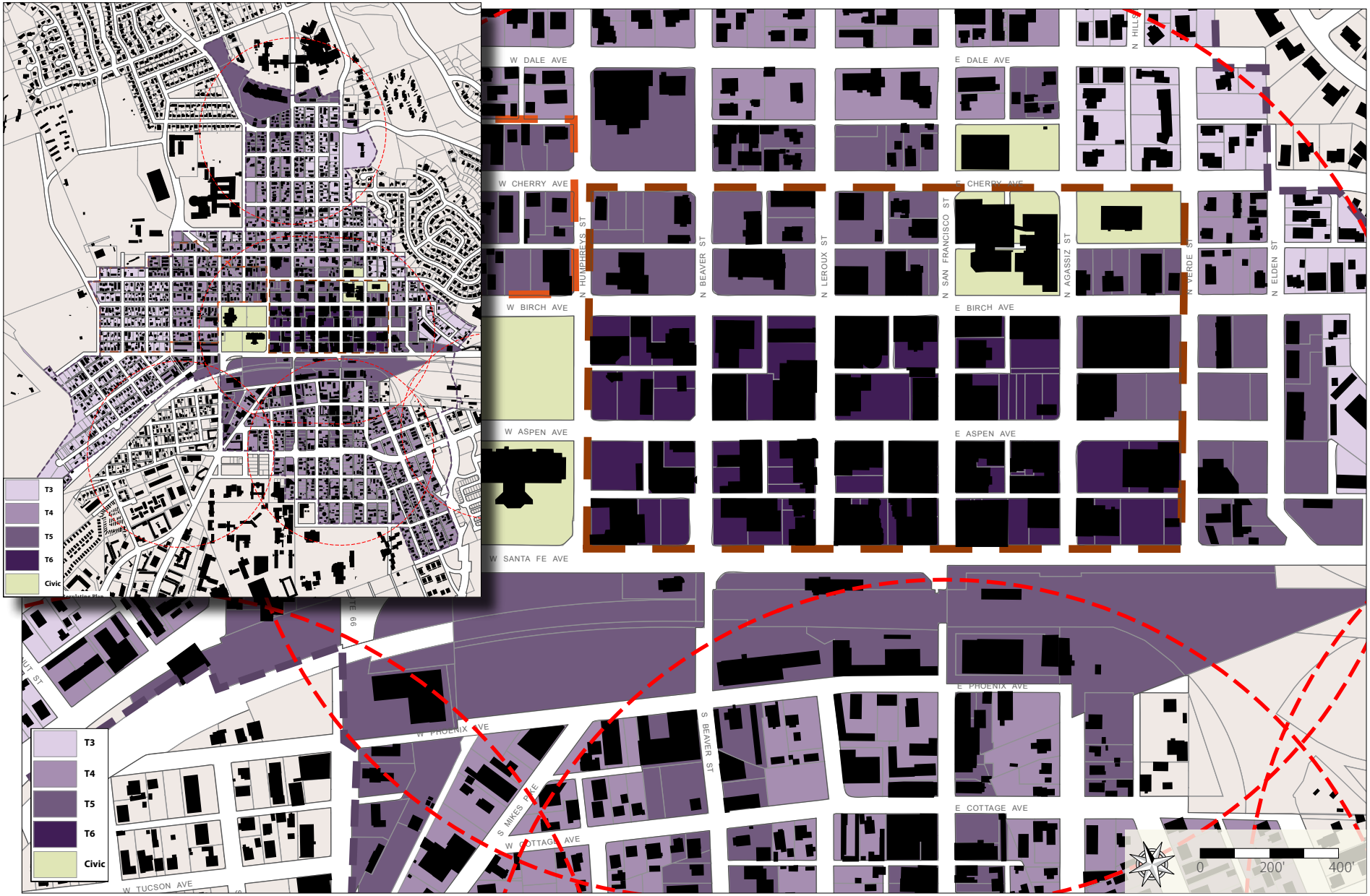
http://www.charretteinstitute.org

Engaged citizens listen to a Brown Bag Lunch presentation

Illustrative Plan



Charrette Regulating Plan



Design Principles

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1 Reinforce Downtown as the Heart of Town

Existing conditions

In-fill for Underutilized Lots

Downtown Flagstaff has a strong core of retail and restaurants, but lacks a clear presence along Route 66 and Humphreys Street and presents many opportunities for redevelopment and in-fill.

The minimum lot size and parking requirements found in the existing Land Development Code encourage the aggregation of small lots for redevelopment. This process often makes it hard for individual property owners to redevelop lots in the Downtown and surrounding neighborhoods. The current parking requirements encourage development that relies on larger surface parking lots, hindering the walkability of downtown by breaking up the visual interest of the surrounding area and creating more driveways that break up the pedestrian sidewalk.

The Form-Based Code in conjunction with the Downtown Management Plan will allow development to occur on existing smaller lots. The Form-Based Code and the Downtown Management Plan will work together in reducing parking requirements to levels that encourage walkability and allow proper in-fill development. The Form-Based Code will work with the Downtown Management Plan to ensure an adequate supply of parking is provided in the Downtown area.

Proposed: West Aspen Avenue and North Beaver Street

A future reduction in parking requirements will make room for large commercial block buildings in the Downtown.

Existing conditions

Proposed: West Birch Avenue. and North Leroux Street.

Commercial block buildings in a hypothetical in-fill project that would develop upon an existing parking lot.

Opportunity for Urban Living

Downtown Flagstaff is a vibrant area full of shoppers, merchants and tourists. The Downtown suffers from a lack of year round residents that would provide a customer base for merchants and restaurants year round.

Downtown and the surrounding neighborhoods are already highly walkable areas. Placing more units in the Downtown will encourage additional local retail and commercial uses in the area. The added residents would support the opening of a small neighborhood-serving grocery store.

Underutilized parcels can help complete Downtown as a neighborhood. These parcels provide the opportunity to add residential units, which provide a greater variety of housing options in a walkable environment.

Existing conditions

Proposed: North Humphreys Street and East Aspen Street

The upper stories of this mixed-use commercial block building step back to provide a terrace and reduce the perceived height.

Existing conditions

Proposed: East Aspen Avenue and North Elden Avenue

A gallery frontage transforms an auto-centric corner into a vibrant pedestrian-friendly mixed-use commercial center.

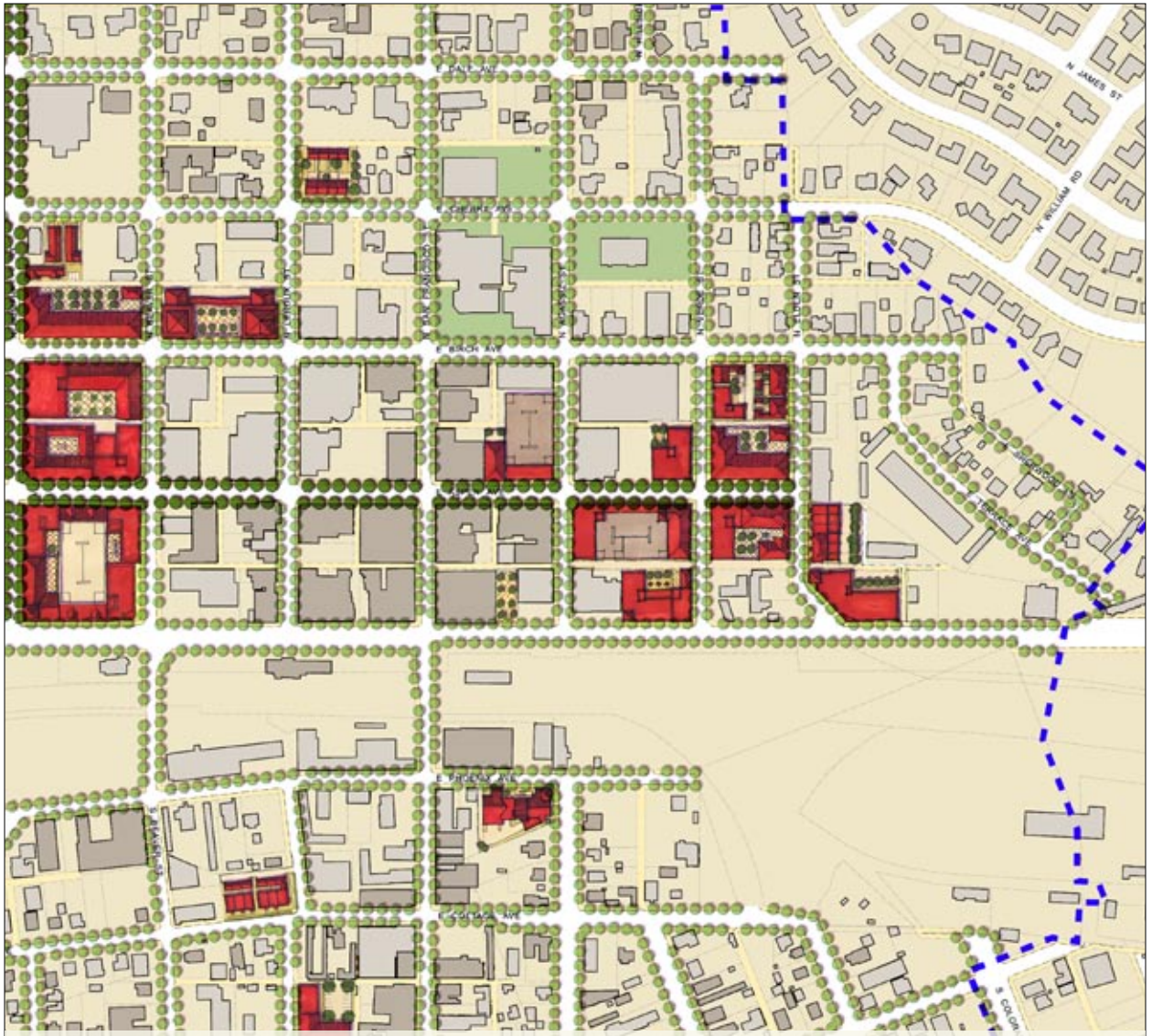
Parking Management is Key to Downtown Evolution

The way parking is managed will play a key role in the future evolution of the Downtown. Analysis of the existing code found that the biggest barrier to developing a building that fit in with the character and scale of Downtown and surrounding commercial areas were the parking requirements. The current parking requirements and minimum lot size push development onto larger consolidated lots, leading to buildings that are out of scale and character with Flagstaff.

The consultant team supports the City's efforts in creating a Downtown Management Plan. The Downtown Management Plan calls for consolidating future Downtown off-street parking into a series of garages. By removing the need for on-site parking, the Downtown Management Plan will allow property owners or developers to more efficiently utilize small- and medium-sized lots in the Downtown.

On-street parking will play a key role in providing convenient parking for visitors and shoppers in the Downtown. The consultant team recommends that the City look into allowing on-street parking in the Downtown and surrounding neighborhoods year-round, except during major snow events.

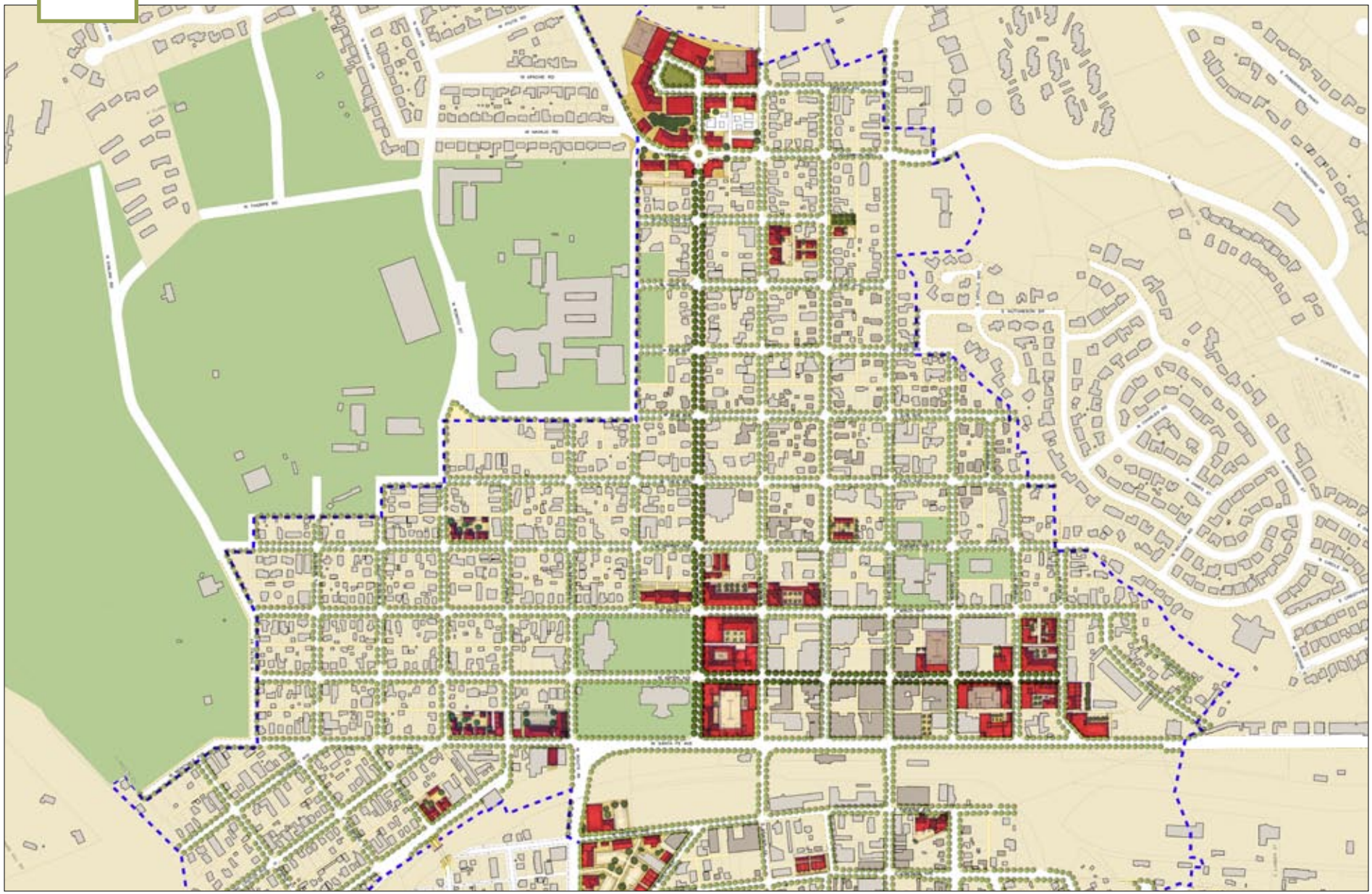
In addition, the consultant team and City staff will look at reducing the minimum number of required parking spaces in the Form-Based Code focus area through the use of both the Form-Based Code and the Downtown Management Plan.



Downtown

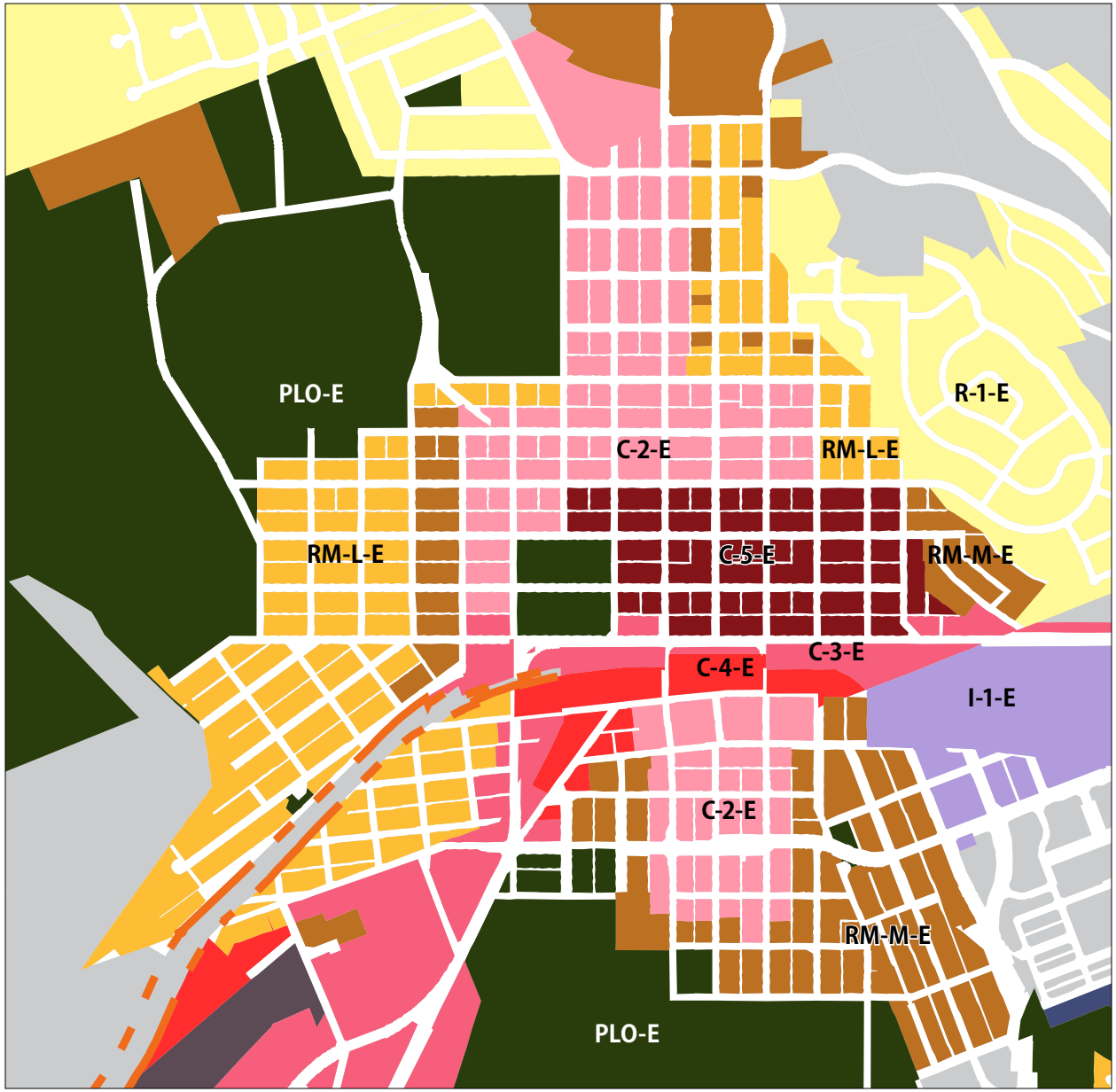
Map illustrating potential in-fill and conceptual parking garage locations.

2 Reduce the Spread of Commercial Uses in Neighborhoods



Limit Commercial Uses to Land Currently Zoned for Commercial Uses

The Charrette Plan and Form-Based Code employ work done in the late 1990s by the North of Downtown neighborhood to limit the spread of commercial uses into single-family neighborhoods. The Plan and Code will work to build upon these efforts by limiting commercial uses in the Form-Based Code areas to areas where it is currently allowed.



Zoning-Established Districts

Residential Districts

- Single-Family Res. Rural Dist. - Established (R-R-E)
- Single-Family Res. Suburban Dist. - Established (R-S-E)
- Single-Family Res. Dist. - Established (R-1-E)
- One and Two-Family Res. Dist. - Established (RM-L-E)
- Multiple-Family Res. Dist. - Established (RM-M-E)
- Manufactured Home Park Dist. - Established (M-H-E)

Commercial Districts

- Neighborhood Commercial Dist. - Established (C-1-E)
- Community Commercial Dist. - Established (C-2-E)
- Highway Commercial Dist. - Established (C-3-E)
- Commercial Service Dist. - Established (C-4-E)
- Central Business Dist. - Established (C-5-E)

Industrial and Facility Districts

- Restricted Industrial Dist. - Established (I-1-E)
- Intermediate Industrial Dist. - Established (I-2-E)
- Intensive Industrial Dist. - Established (I-3-E)
- Research & Development Industrial Dist. - Estab. (R&D-E)

Rural / Open Space / Public Lands Districts

- Public Lands Open Space & Bld. Dist. - Established (PLO-E)

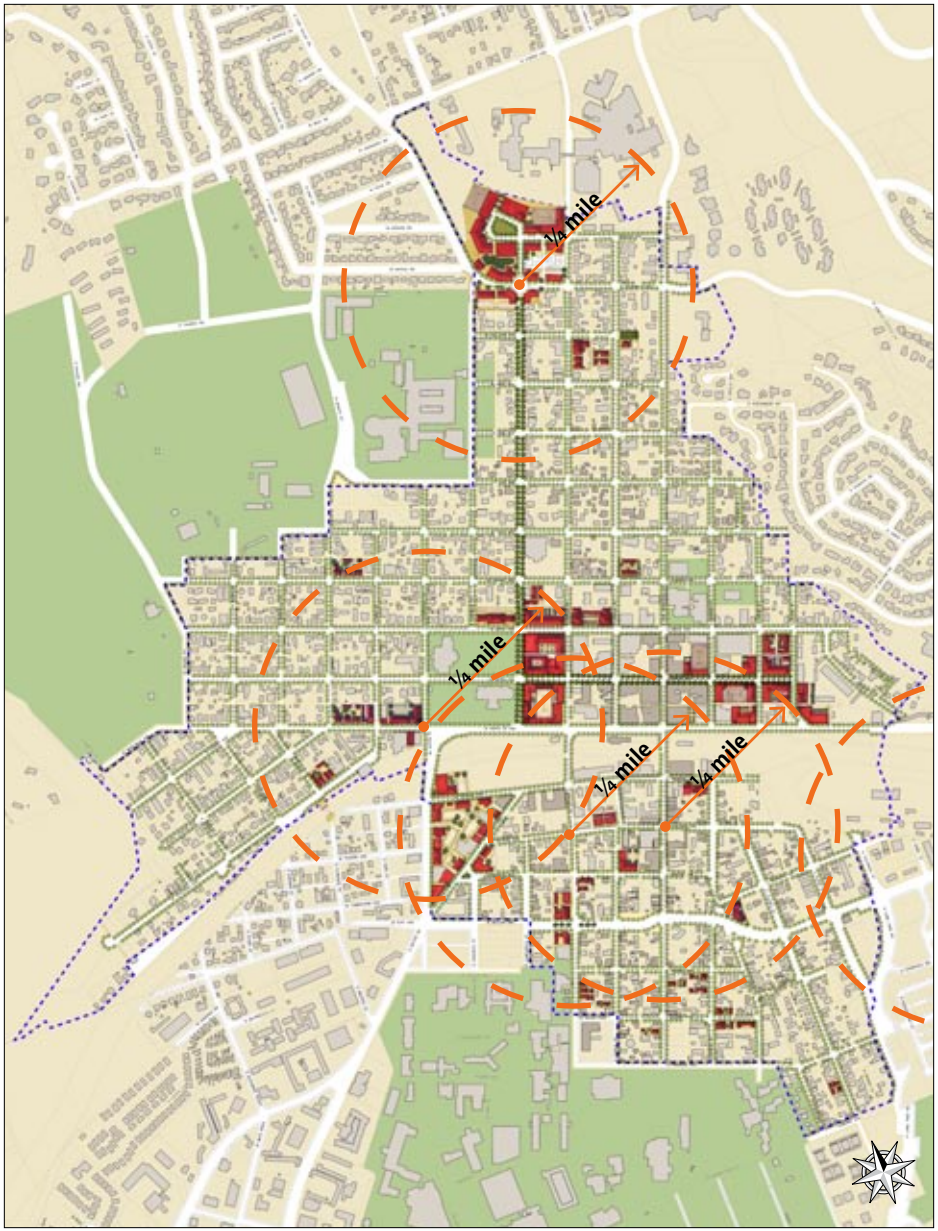
Performance Based Zoning

- Land Zoned with Performance Based Zoning

3 Provide a Mix of Neighborhood-Serving Amenities

Provide a Mix of Neighborhood-Serving Commercial Amenities Within Walking Distance

The Charrette Plan and Form-Based Code include the opportunity for existing commercial areas to transition into neighborhood commercial uses in a Main Street form. These uses would serve the adjacent residential communities. A small grocery store or other convenient amenity can be positioned within walking distance of a concentration of homes and living units, which can reduce the need for automobile use in the area. This results in lively neighborhoods where people are more likely to be out walking, interacting with each other and enjoying a sense of community. Because of the regulations put into place by the Form-Based Code, these uses will be built in the character of the neighborhoods they serve, creating a cohesive and vibrant feeling within their zones. Neighborhood Main Streets will also incubate small local businesses.



New and reinforced Neighborhood Main Street designated by a pedestrian shed of a quarter mile or 5-minute walk.

What is a Neighborhood Main Street?

A Neighborhood Main Street is a focused area of small-scale retail and commercial uses located within walking distance of a neighborhood.

- Found at the center of a neighborhood or between two or more neighborhoods.
- Typically include delis, restaurants, cafes, bagel shops, and other commercial amenities.
- Emphasis is placed on access by foot, bicycle and transit, so little parking is provided off-street.
- Often incorporate neighborhood markets ranging in size from 5,000-15,000 gsf.
- Friendly to local businesses
- Provide opportunities for small start-up companies.

Proposed transformation of strip mall.

Existing conditions

Proposed: North Humphreys Street and West Columbus Avenue

A commercial center designed at the pedestrian scale creates a walkable community with reduced automotive needs

Columbus Avenue and Humphreys Street

The intersection and surrounding area of Columbus Avenue and Humphreys Street currently provide retail and commercial amenities to local residents and regional tourist traffic. Over time, the intersection will provide the opportunity to form the northern gateway into the Downtown and Downtown neighborhoods. A modern roundabout would provide a visual and physical transition from the urban edge character of Fort Valley Road to the more urban character of Downtown.

Maintaining the form and feel of an urban intersection is essential. This refers not only to the actual physical form of the streets, but also to the future transformation of the current commercial strip mall into a mixed-use center. Ideally, this center of activity would move down from the hill slightly in order to become more accessible to the surrounding neighborhood and to contribute to the intersection as well as the Beaver Street corridor as a whole.

Continue to support small, local commercial along North Humphreys Street and Beaver Streets

In analyzing the existing Land Development Code, the consultant team found that several barriers currently prevent owners of small parcels from developing small, locally oriented commercial buildings. The two biggest barriers were the minimum lot size requirement and off-street parking requirements. The combination of these two requirements pushes development towards the consolidation of lots and larger developments.

The Form-Based Code will allow the typical smaller lots found along the corridors to develop, and will explore a reduced off-street parking requirement. The code will also keep new developments compatible in scale with the single-family character of the adjacent North of Downtown neighborhood and ensure that adequate on- and off-street parking is provided. The Downtown Management Plan may consider a residential permit parking district as a strategy for preventing spill over parking.

West Santa Fe Avenue at North Sitgrevas Street

By building upon existing retail and commercial uses in this area, there is a potential to create a Neighborhood Main Street along Santa Fe just west of City Hall. A few appropriately scaled commercial uses designed in the character of the neighborhood could reduce the use of automobiles and encourage residents to walk more often and interact with their neighbors on a more regular basis. In order to prevent commercial uses from disturbing the quality of the residential neighborhood, commercial uses will be allowed only in those parcels that are currently zoned as such.

South San Francisco Street and South Beaver Street

The Charrette Plan and the Form-Based Code will work to implement the vision set forth in The Southside 2005 Plan Strategies for Development completed by Field Paoli in 2005. In addition, public realm improvements are scheduled to begin in the Spring of 2010.

The South San Francisco Street and South Beaver Street corridors serve as important connectors between Northern Arizona University and Downtown. Efforts should be focused on building upon and reinforcing the activity already found in the corridors by focusing any new retail and commercial opportunities into them. In the short- to mid-term, new retail and commercial uses should not be allowed to spread into the residential and light industrial areas. In addition, the parcels between Phoenix Avenue and Route 66 should be allowed to be developed as a "bridge" between Downtown and the Southside.

The residential fabric of the Southside should be reinforced with medium-density residential that is in character and scale with the neighborhood. The Charrette Plan and the Form-Based Code will set standards for duplex units, small apartment house buildings (four to six units), townhouses, and live/work units appropriate to the neighborhood.

Proposed: Southside In-fill Opportunity

Appropriately scaled in-fill can both increase density and provide a mix of uses and amenities to a neighborhood

4 Reinforce the Gateways into Flagstaff

Design Gateways and Focal Points that Reinforce Community Character

Downtown Flagstaff has a strong core of retail and restaurants. However, at the edges the Downtown is less defined and has many opportunity sites. The Downtown lacks a visual presence along Humphreys Street and has only one-and-a-half blocks of strong presence along Route 66.

Existing conditions

North Humphreys Street and East Aspen Avenue

West Side: North Humphreys Street and Route 66

The intersection of Humphreys and Route 66 is an important gateway into Downtown Flagstaff. With City Hall set back from Route 66, the corner of Humphreys Street and Route 66 is very prominently displayed. The design of buildings and parking structures should carefully consider pedestrians and the importance of this corner. For example, if a garage were to be built on this corner, it should contain street level retail.

The four blocks between Route 66 and Dale Avenue provide large consolidated parcels that could be redeveloped as mixed-use buildings with integrated parking within or under the building, which would provide smaller ground-floor retail space and additional uses above.

Existing conditions

East Aspen Avenue and North Elden Avenue

East Side: Route 66 and Elden

The eastern entrance to Downtown has the opportunity to redefine a portion of Route 66 and extend the vibrant Downtown to the east. Large consolidated parcels provide opportunity sites for mixed-use in-fill development. New development should provide a mix of retail and commercial uses on the ground floor and residential or commercial uses above with parking integrated as part of the building (garage wrapped around the back or underneath).

Existing conditions

North Humphreys Street and West Columbus Avenue

North Side: Columbus and Humphreys

The intersection of Columbus Avenue and Humphreys Street provides an opportunity to form the northern gateway into the Downtown and Downtown neighborhoods. As Highway 180 proceeds from Humphreys Street it turns northwest at a four-way "plus" intersection onto Columbus Avenue/ Fort Valley Road. A roundabout at this intersection could facilitate the northbound left-turn movement and might allow a greater operational efficiency with improved pedestrian access through the intersection. Hall Planning Engineering recommends additional study of this option.

The modern roundabout with urban buildings holding the corners would provide a visual and physical transition as motorists head south from the urban-edge character of Fort Valley Road to the more urban character of Downtown. This visual and physical transition is important for drivers to experience, making them aware of the speed at which it is appropriate to drive in the more urban areas where interactions with pedestrians and bicyclists are more likely. Pedestrian access across the Fort Valley intersection (where the roundabout is proposed) is important.

Consider potential along Route 66, particularly when Lone Tree Road is extended

From a traffic operations perspective, roundabouts offer an advantage over conventional intersections in terms of off-peak delay. During times when some legs of the intersection are being used more than others, such as an off-peak period, the roundabout minimizes delay to the primary movements. During peak periods, roundabouts function as well or better than conventional intersections in many situations. For the Route 66 intersections, including Lone Tree, use of a roundabout could result in higher overall efficiency. In addition, the physical design of a roundabout prevents speeding and ensures safer crossing conditions for pedestrians.

Potential traffic circle at Lone Tree and Butler Street

A roundabout could also be considered for the Lone Tree and Butler Street intersection. The roundabout could make it easier for pedestrians and bicyclists to cross the intersection while allowing traffic to flow.

5 Provide an Appropriate Transition from Downtown Core

Example of the form of a small apartment house.

Example of a duplex unit.

Provide an Appropriate Transition from the Downtown Core

The transition between the larger-scale commercial block buildings in the Downtown area and the smaller-scale residential neighborhoods in North Flagstaff will occur as a smooth gradient of density, defined by the Transect zones put into place by the Form-Based Code. This transition will take place primarily within the T5 and T4 zones. The T5 zone engages the character of the Downtown area while beginning to reduce the size and scale of the buildings that exist in T6. The T4 zone will contain small-footprint multi-family building types that appear in the character of single-family homes, so as to maintain the traditional feel of the adjacent T3 neighborhoods. To a pedestrian or motorist travelling north through Downtown, this series of Transect types will create a gentle transitional experience from the tall buildings in the downtown area into the more residential zones that are made up of small single-family homes.

Proposed: Typical T-4 Streetscape Character

Small medium-density buildings provide a buffer between commercial areas and single-family neighborhoods.

Existing conditions

Proposed: East Cherry Avenue and North Leroux Street

Apartment buildings and mixed-use buildings transition in scale from the Downtown to the surrounding neighborhoods.

Enable Southside to Evolve

Enable Southside to Evolve

The Southside neighborhood can grow into a vibrant community, complete with a diverse range of housing types and appropriately scaled commercial amenities. The Charrette Plan and the Form-Based Code work to allow the implementation of the community's vision set forth in *The Southside 2005 Plan Strategies for Development*, completed by Field Paoli in 2005.

South Beaver Street and South San Francisco Street should be reinforced as the main retail and commercial corridors of the Southside. These corridors connect the Downtown with Northern Arizona University, and can provide the neighborhood with retail amenities. The Southside is a neighborhood in which public space and shared space are important. Because of the NAU-Downtown connection, wider sidewalks, plazas, piazzas, public art and shared parking should be planned for.

During the charrette there was discussion about building upon the unique character of the Southside's built form. The Southside has a mix of architectural styles that ranges from 1920s Bungalow to Mid-Century Modern to small industrial buildings. The western edge of the neighborhood has a healthy mix of commercial businesses and artists' studios. The community expressed a desire to allow a more creative expression of architecture both in massing and material. There was also a desire for the color palette to use more natural tones.

Existing conditions

Existing conditions

South San Francisco Street and East Cottage Avenue: Potential in-fill development showing three stories of residential above ground-floor retail or commercial.

In-fill lot in the Southside: Live/work units could provide artists and professionals with space to incubate their businesses.

Reinforce the Single-Family Character of RM-L-E (T3)

Example of single-family character and scale in Flagstaff.

Example of single-family character and scale in Flagstaff.

Encourage New Development to Match the Character and Scale of Flagstaff

The Charrette Plan and the Form-Based Code call for continued preservation of the single-family neighborhoods' scale and character. This is to say that new in-fill buildings will be representative of both the character and scale of the neighborhoods in which they are placed, so as to maintain a cohesive relationship between all of the buildings within single-family neighborhoods while maintaining the historic fabric of Flagstaff. The passage of the Historic Preservation Overlay in the Flagstaff Townsite neighborhood and the efforts of the North of Downtown residents in the late 1990s to preserve the single-family character of the neighborhood through zoning changes have gone far. The Charrette Plan and the Form-Based Code will build upon these efforts and preserve the single-family scale and character of the neighborhood.

Typical T-3 Area Character

8 Create Livable Streets

Reinforce a Fine-Scale Grid at Every Opportunity

A fine-grained network of streets, such as the classic "grid" with 300'-500' block face dimensions, will create a high-volume traffic network with manageable vehicle speeds. This network will provide multiple routing options for pedestrian, bicycle and motor vehicle travel. Long, straight runs of thoroughfares can promote speeding, so care must be taken to interrupt the grid periodically. Livable thoroughfares necessitate the smallest workable lane dimensions (based on the design vehicle), and often traffic signalization as well, to keep vehicle speeds at 25 mph or less. These speeds are crucial to walkability as pedestrians are most comfortable with speeds below 30 mph.

Support the new vision for Downtown

The new thoroughfare standards have been carefully crafted to support the vision of Downtown. Improvements that are inconsistent with these standards may also be inconsistent with the vision and urbanism desired for Downtown.

Do not close streets

Streets should not be closed or vacated except by extreme exception. Streets may be closed for major events such as the First Friday Artwalk, parades and other special events. Downtowns and neighborhoods depend on the small fine-scale grid of streets found in the older and historic neighborhoods. While there are many examples of pedestrian-only streets across the country and the world, they frequently depend on higher-density residential neighborhoods and tourists. More often than not, pedestrian-only streets fail to achieve the desired result of a vibrant pedestrian-only environment.

Encourage left-hand turns off Route 66 into Downtown

Left-hand turns are restricted to allow a higher level of service on arterial streets. In a walkable area, however, the level of service for through traffic must be balanced with the circulation and pedestrian functions of the urban street system. Permitting left-hand turns will enhance the circulation function and help reactivate more streets in the Downtown area.

Add frequent new grade crossings of BNSF RR, I-40 & Route 66

Adding frequent new grade crossings at BNSE, RR, I-40 and Roue 66 will permit greater circulation within the grid. Through this sharing of the road, the need to widen a few streets to unwalkabale dimensions will be greatly reduced.

Remove One-way Couplets

The 2005 Southside Plan recommends removing the one way pairs, Beaver Street and San Francisco Street, once the Lone Tree Corridor is connected over the railroad. One-way streets provide approximately twenty percent more capacity for vehicular traffic. However, this is the only advantage they provide. In exchange, they permit and encourage faster vehicle speeds, create over twenty percent greater vehicle miles of travel (VMT) through more circuitous routing, reduce business opportunity and frustrate pedestrian and bicycle movement. Therefore, the consultant team agrees with the 2005 Southside Plan and recommends returning the existing one-way couplet to two-way operation.

In addition the one way couplets of Aspen Avenue and Birch Avenue should be returned to two-way operation to improve circulation, manage speeds and improve business.

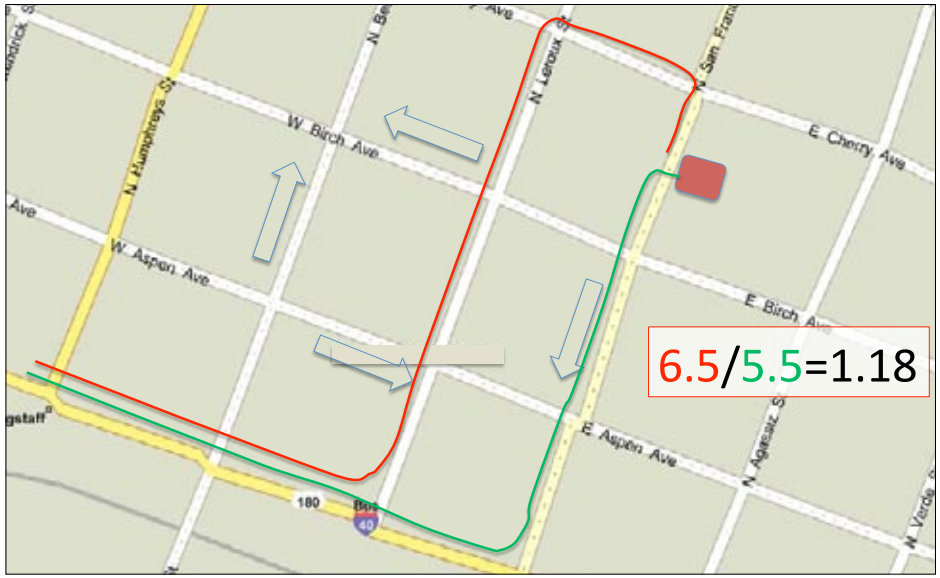


Diagram showing the number of blocks driven to arrive at an address. Red line indicates the current one-way couplet distance and green showing the potential with a two way street system.

Any street improvements should allow for easy two-way conversion in the future

The San Francisco and Beaver Street programmed streetscape project south of Route 66 should be designed and constructed so as to facilitate two-way conversion as soon as possible. As the new TND thoroughfare standards become more familiar, they will be easier to apply to existing streets. For the present, care should be taken that any "improvements" use the new standards and at least provide for conversion at some point in the future.

Existing one-way Beaver Street

Encourage Four Travel Modes for Sustainable Transportation

Pedestrian: create active thoroughfare edges and do not create barriers to walkability

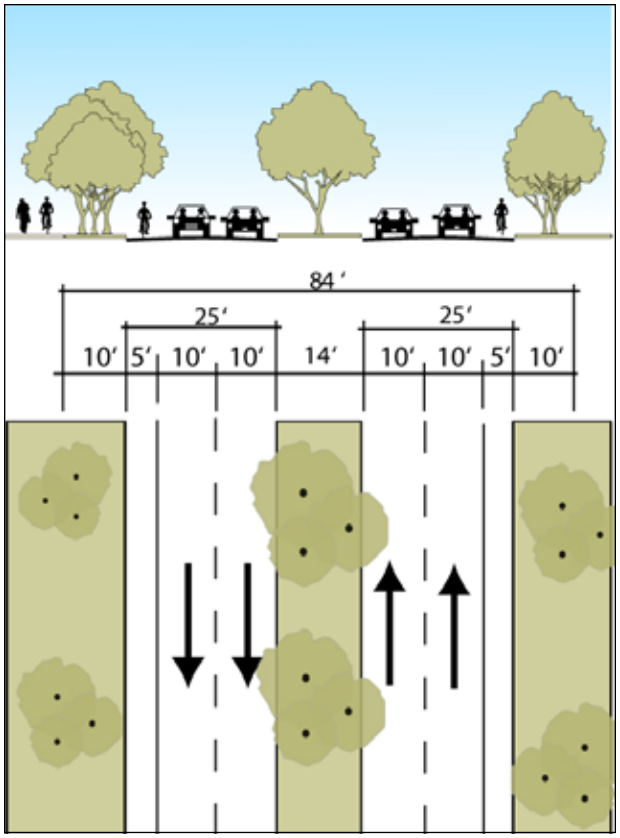
Active street-level frontages help provide a safer and more inviting pedestrian experience. Parking structures and lots should not front onto primary streets, but should be lined with active ground-floor spaces, either retail or commercial.

Lone Tree "Road" acts as a barrier for residents of Southside to Aspen Place at the Sawmill. As the design of Lone Tree is refined, ways of defining both a rural and an urban character should be considered. Cross-sections should differ by context of location. Once drives are close, the Sawmill development speeds could be reduced.

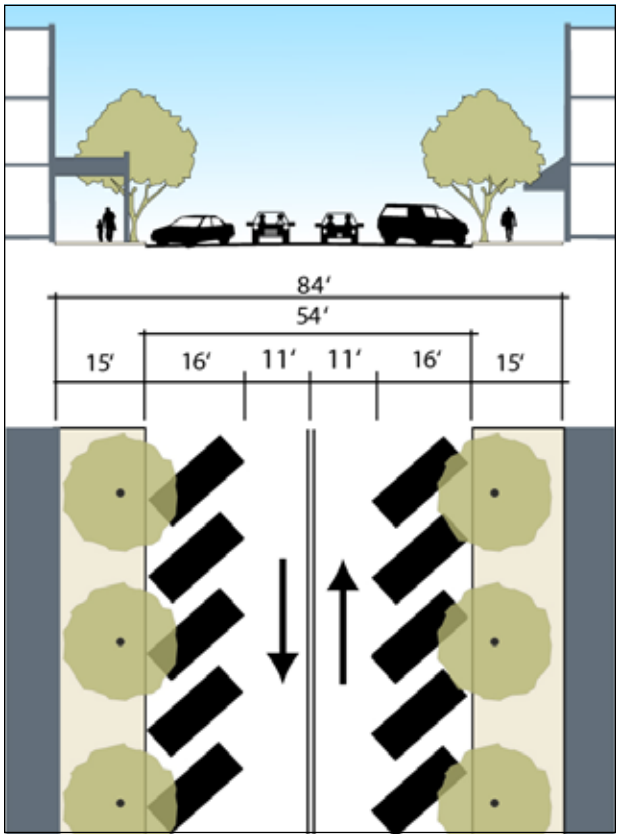
Bicycle: share the road at low speeds, define lanes at high speeds

Bicyclists thrive in walkable conditions. Managed traffic speeds of 25 mph or less facilitate bicycle use and a fine-grained network provides for shorter routing for cyclists. Use the "sharrow" shared lane marking on the street, if desired, to indicate that cyclists are expected to share the lane with motorists. Provide ample bicycle parking, with the hitching post as the recommended parking option Historic Downtown Flagstaff. Start with two to four bike racks per block, but be prepared to add more as blocks develop a greater cyclist clientele.

On roads with speeds above 25 mph, bicyclists can be encouraged to share the road with motorists if roads are made safer to ride on. Special considerations must be made for bicyclists. The most important of these is to define lanes as being either for bikes or for cars. The easiest of these changes may be as simple as a painted stripe to define the bike lane and a bicyclist logo in the center of lanes that are to be used by bikes. It may also make sense to create a network of bicycle boulevards - a small number of streets that are emphasized primarily as streets for bikes rather than cars.



Lone Tree Road rural character (Image courtesy of Hall Planning & Engineering, Inc.)



Lone Tree Road urban character (Image courtesy of Hall Planning & Engineering, Inc.)

Transit: make it easy to use

Transit ridership should be encouraged by making transit easily accessible, providing frequent service, and providing everyday shopping needs at key bus stops. Creating a safe and pedestrian-friendly environment can help to raise the levels of ridership on public transit. The addition of Neighborhood Main Streets, providing retail and commercial amenities at or adjacent to key neighborhood stops, can further encourage ridership.

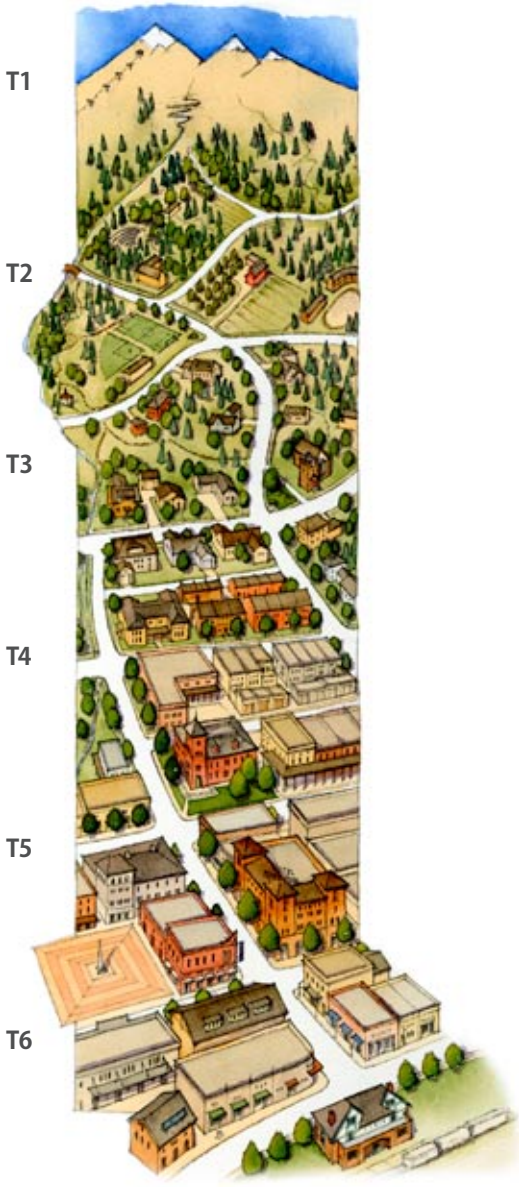
Automobile: manage traffic speed based on context and desired walkability

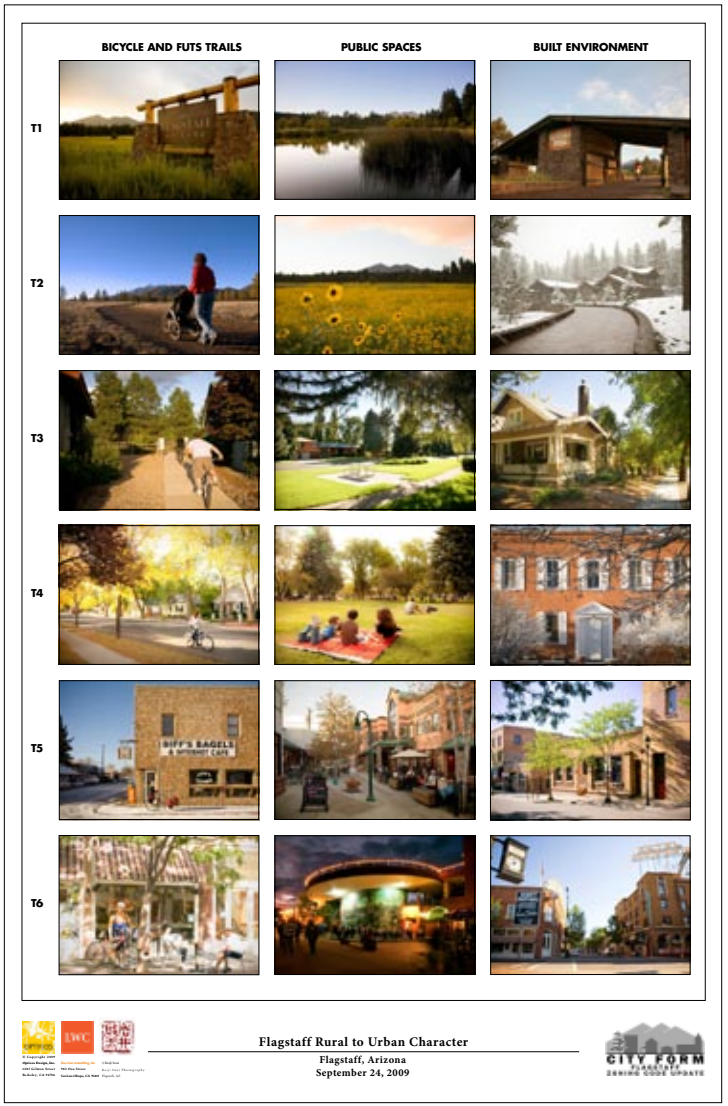
When it comes to posted speed, “twenty is plenty" in T-4 to T-6. The lower speed helps create a more inviting pedestrian environment and helps lower the potential for pedestrian fatalities in accidents.

“Sharrow” shared lane in an urban context.

Bicycle lane on a road with a post speed of above 25 mph. (image courtesy of Dan Burden)

Utilize the Rural-to-Urban Transect & Community Types





T3 N

T3 Neighborhood

Desired Form

Residential

General Use

Residential

Intent

To protect the integrity and quality of the Downtown neighborhoods

T4 N

T4 Neighborhood

Desired Form

Residential

General Use

Residential

Intent

To build upon the unique characteristics of Flagstaff's Downtown neighborhoods, but to allow them to evolve with medium-density building types such as bungalow courts, duplexes, and apartment houses, at a smaller scale compatible with their context.

Initial draft of transect zones proposed at the charrette.

T4 N-O	T5	T6
		
T4 Neighborhood-Open	**T5**	**T6**
Desired Form	Desired Form	Desired Form
Residential	Commercial/Shopfronts	Commercial/Shopfront
General Use	General Use	General Use
Ground-Floor Commercial Upper-Floor Residential or Commercial	Vertical Mixed Use: retail, general commercial, services, and public on the ground floors with residential or commercial uses on upper floors.	Vertical Mixed Use: Retail, general commercial, services, and public on the ground floors with residential or commercial uses on upper floors.
Intent	Intent	Intent
Used where commercial is currently allowed in order to integrate vibrant commercial and retail environments into neighborhoods, providing access to day-to-day amenities within walking distance, creating potential for a transit stop, and serving as a focal point.	To integrate vibrant main-street commercial and retail environments into neighborhoods, providing access to day-to-day amenities within walking distance, creating potential for a transit stop, and serving as a focal point for the neighborhoods.	Allow Downtown to evolve into a complete vibrant neighborhood with higher-density, vertical, mixed-use building types such as commercial blocks.

Initial draft of transect zones proposed at the charrette.

Support Local Retail and Restaurants

©Keiji Iwai Photography

Economic Sustainability

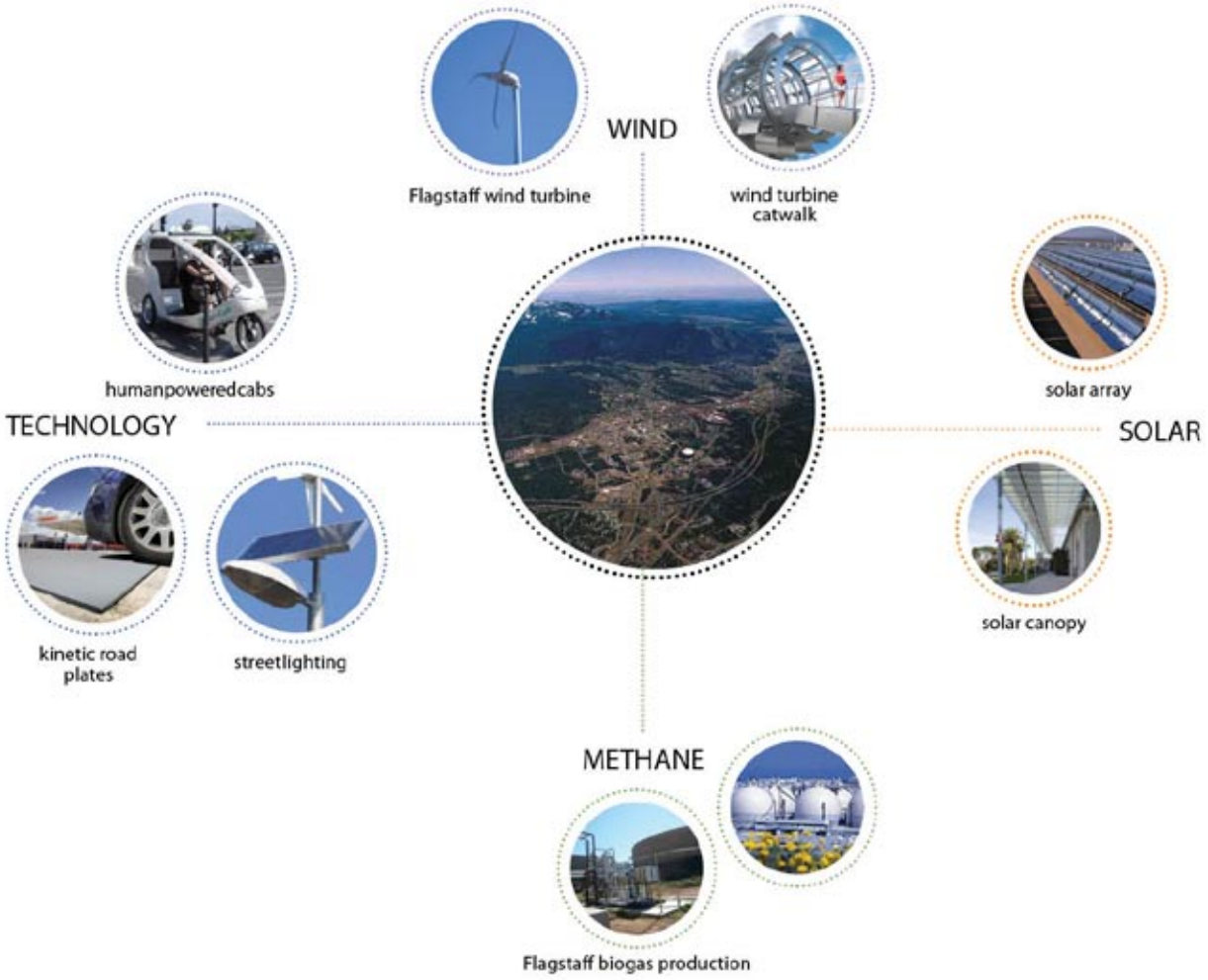
Support Local Artists, Retail Establishments and Restaurants

The Charrette Plan and Form-Based Code will support local artists, retail establishments and restaurants by allowing a more diverse mix of building types and streamlining the process of changing uses with in a building.

Form-Based Codes begin by emphasizing the built form of buildings and allow a diverse mix of uses in the more urban settings of T5 and T6, Downtown and the immediate surrounding blocks. By permitting a variety of uses, the Form-Based Code allows for uses to change more easily over time. This translates into lower costs for property owners and tenants when uses are changed.

The Form-Based Code also removes some of the barriers that currently exist in the Land Development Code. In particular, the Form-Based Code will look into lowering the minimum lot size and off-street parking required for commercial development. Other engineering standards and utility standards will need to be looked at to allow a smoother process in transitioning between different uses. One such standard is allowing for common grease traps or grease traps with in the public rights of way for restaurant uses.

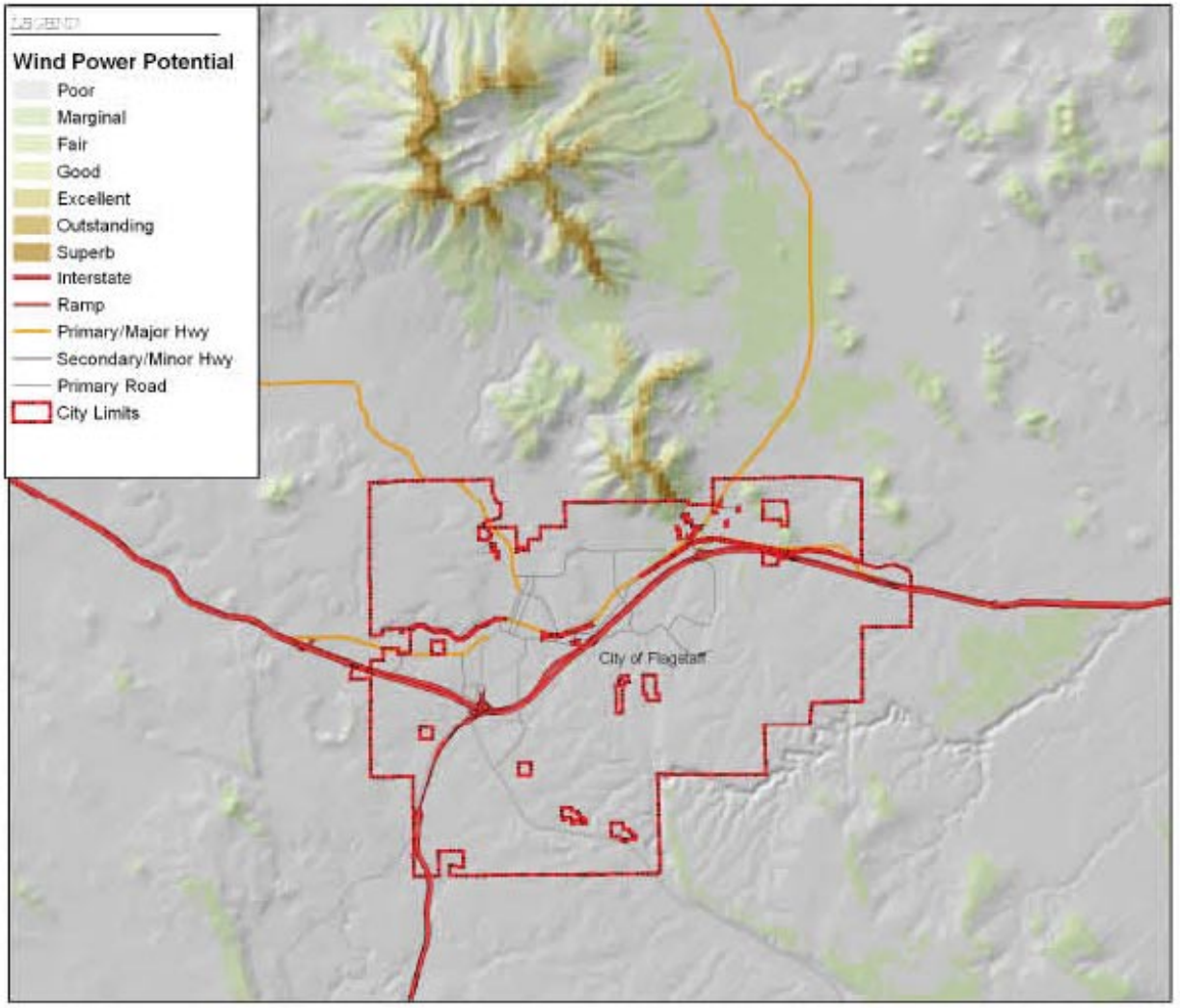
Integrate Alternative Energy Strategies



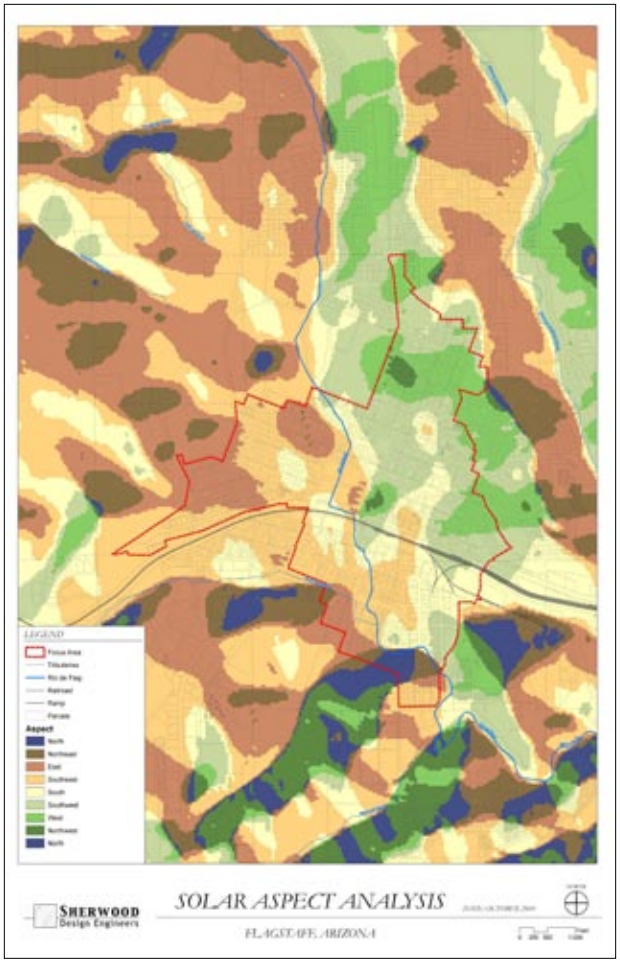
Alternative Energy

As part of the Land Development Code Rewrite, Sherwood Design Engineers explored the potential for capitalizing on alternative energy production. Sherwood explored the inherent potential of power generated from the local wind patterns and the potential for harvesting solar power. While Flagstaff has periods of high wind, the urbanized areas of the City generally lack good access to consistent winds. Wind turbines would have to be substantially elevated in order to have consistent access to sufficient wind. This poses problems in urbanized areas for reasons including blocked viewsheds, complications related to power/telephone lines, and issues with access for maintenance. That said, the consultant team will continue to look into options for harvesting wind energy with the City.

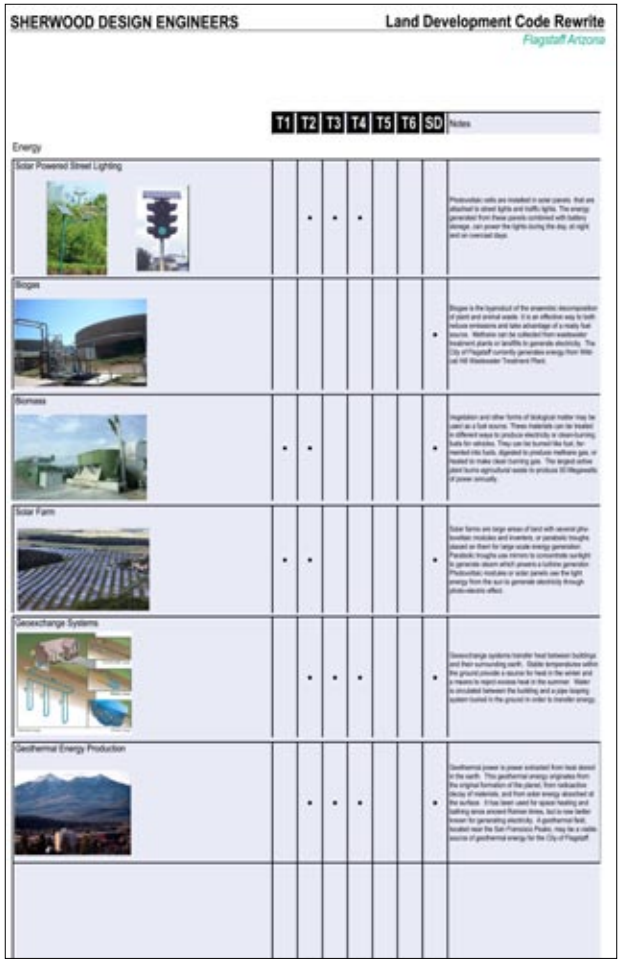
Sherwood Design Engineers also looked at the potential for harvesting solar power and found that Flagstaff is an ideal location for it. At the charrette, Sherwood Design Engineers mapped out the potential for harvesting solar power in the focus area by combining the solar orientation of lots with the Transect zones and highlighting those areas where harvesting solar power was most ideal. The diagram is not intended to indicate that harvesting solar power should not be considered outside those ideal locations, but simply that these other locations will need a more fine-toothed exploration on a lot-by-lot basis.



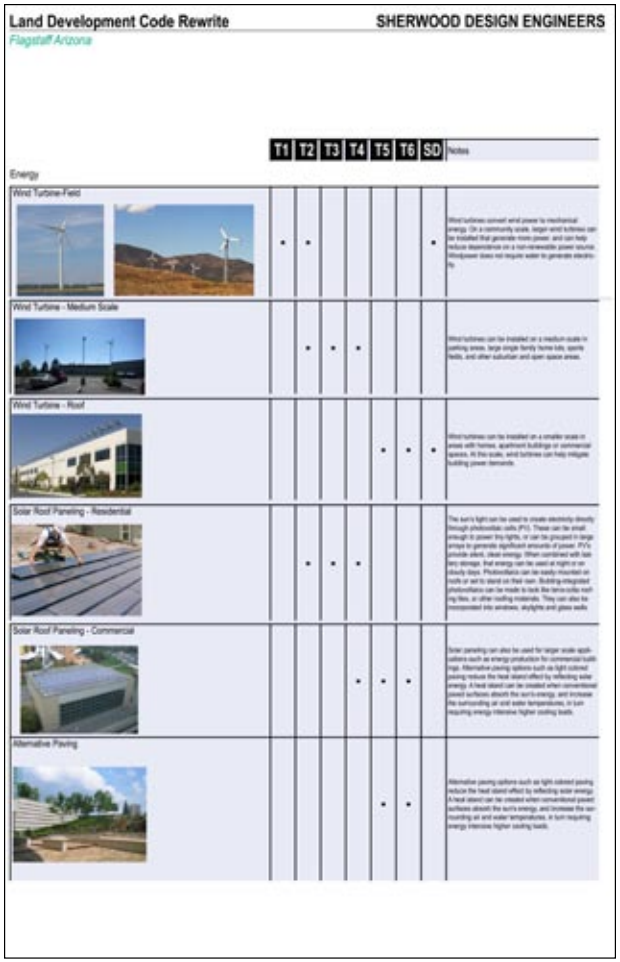
Flagstaff Regional Wind Map

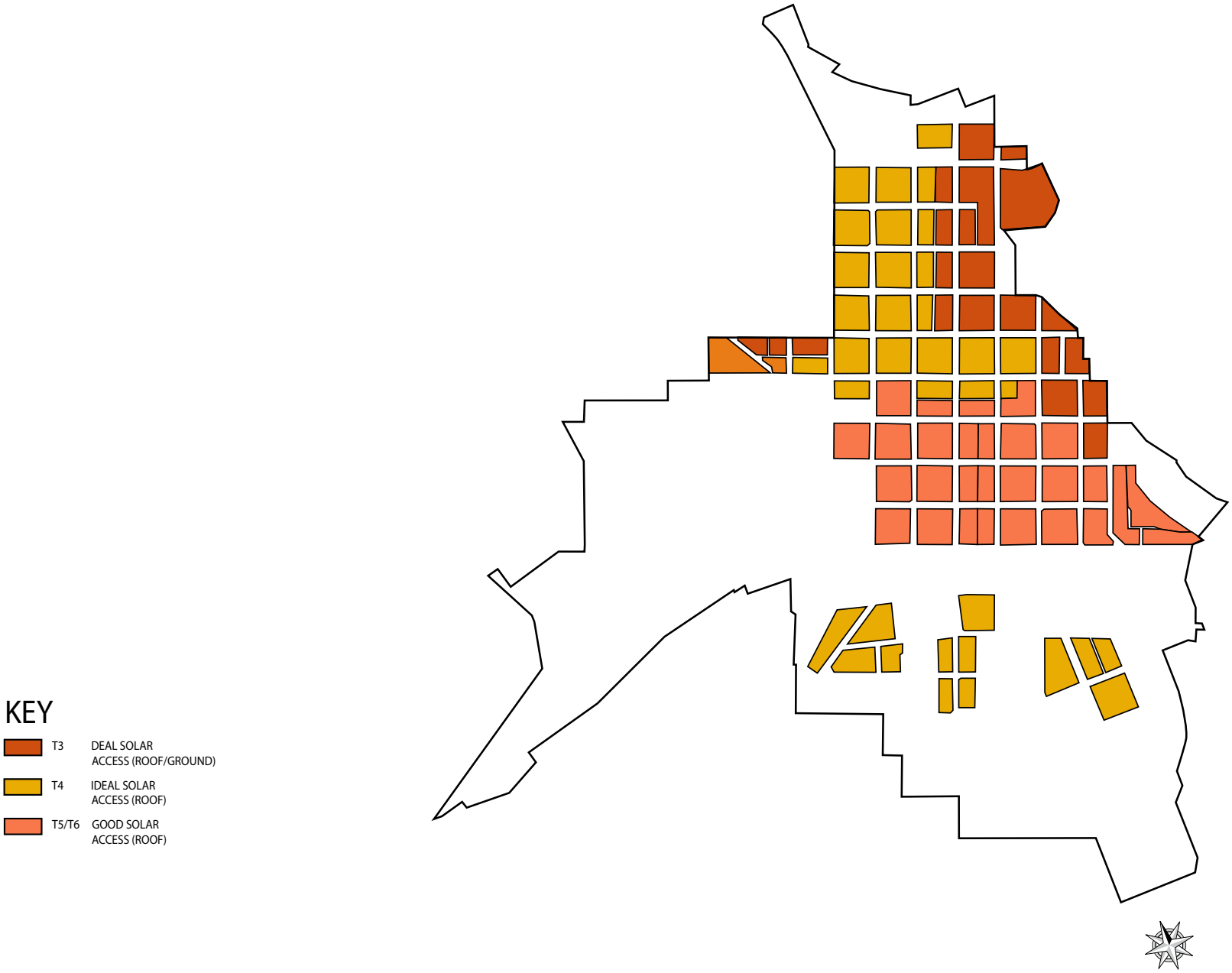


This map describes the varying potential for solar energy harvesting in Flagstaff.

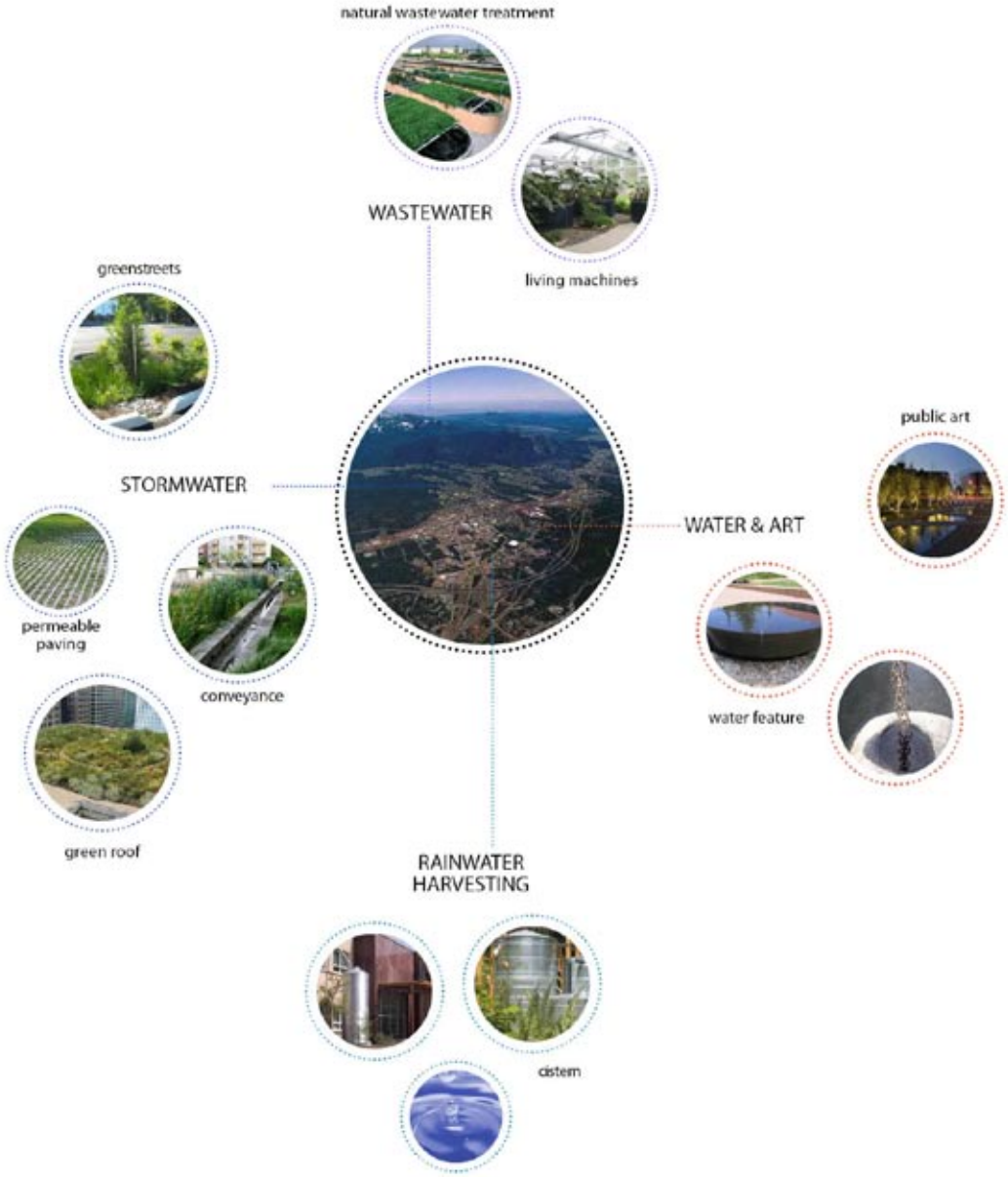


Draft approach to application of sustainable elements across the transect




KEY
T3 DEAL SOLAR ACCESS (ROOF/GROUND)
T4 IDEAL SOLAR ACCESS (ROOF)
T5/T6 GOOD SOLAR ACCESS (ROOF)

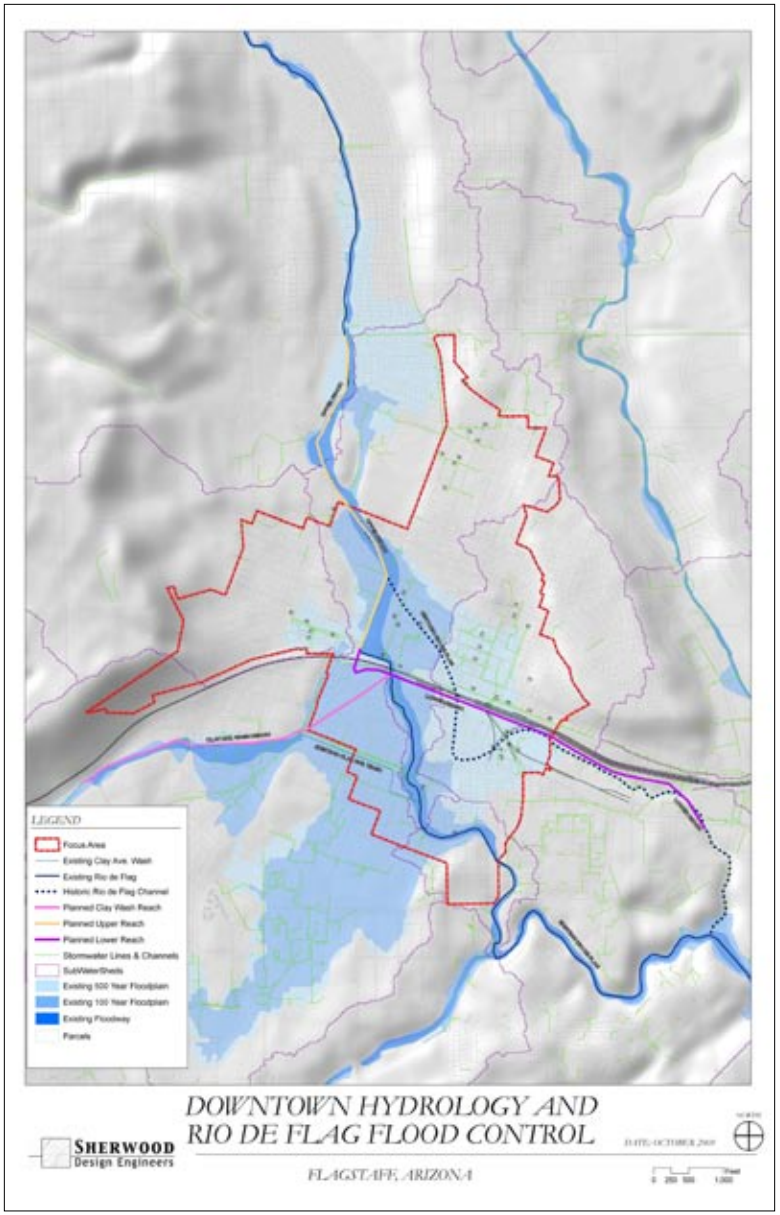
Integrate Stormwater Management Strategies



Stormwater Management

As part of the Land Development Code Rewrite, Sherwood Engineers explored potential sustainable approaches to stormwater management. During the charrette, Sherwood constructed stormwater management recommendations based on the existing infrastructure, Transect zones and water-infiltration potential. The findings were distilled down into an overlay of the Transect zones put in place during the charrette. The stormwater recommendations were based on considerations such as whether or not the soil in a specific location would work for filtration, or if the existing topography would allow for filtration at all. The Code Rewrite, The Development Code, and The Light Impact Development Ordinance will work together toward strategies for urban management.

The recommended strategies are not meant to prevent the use of other techniques, but instead are meant to help guide people in what measures may be most appropriate. The Land Development Code and the Low Impact Development Ordinance will work together to break down barriers that currently are inhibiting sustainable design or elements.



Arizona Fescue

(Festuca arizonica)

Blue Flax

(Linum lewisii)

Blue Fescue

(Festuca glauca)

Butterfly Milkweed

(Asclepias tuberosa)

Fernbush

(Chamaebatiaria millefolium)

Karl Foerster Grasses

(Calamagrostis acutiflora)

Licorice Mint

(Agastache rupestris)

Rabbitbrush

(Chrysothamnus nauseosus)

Utah Serviceberry

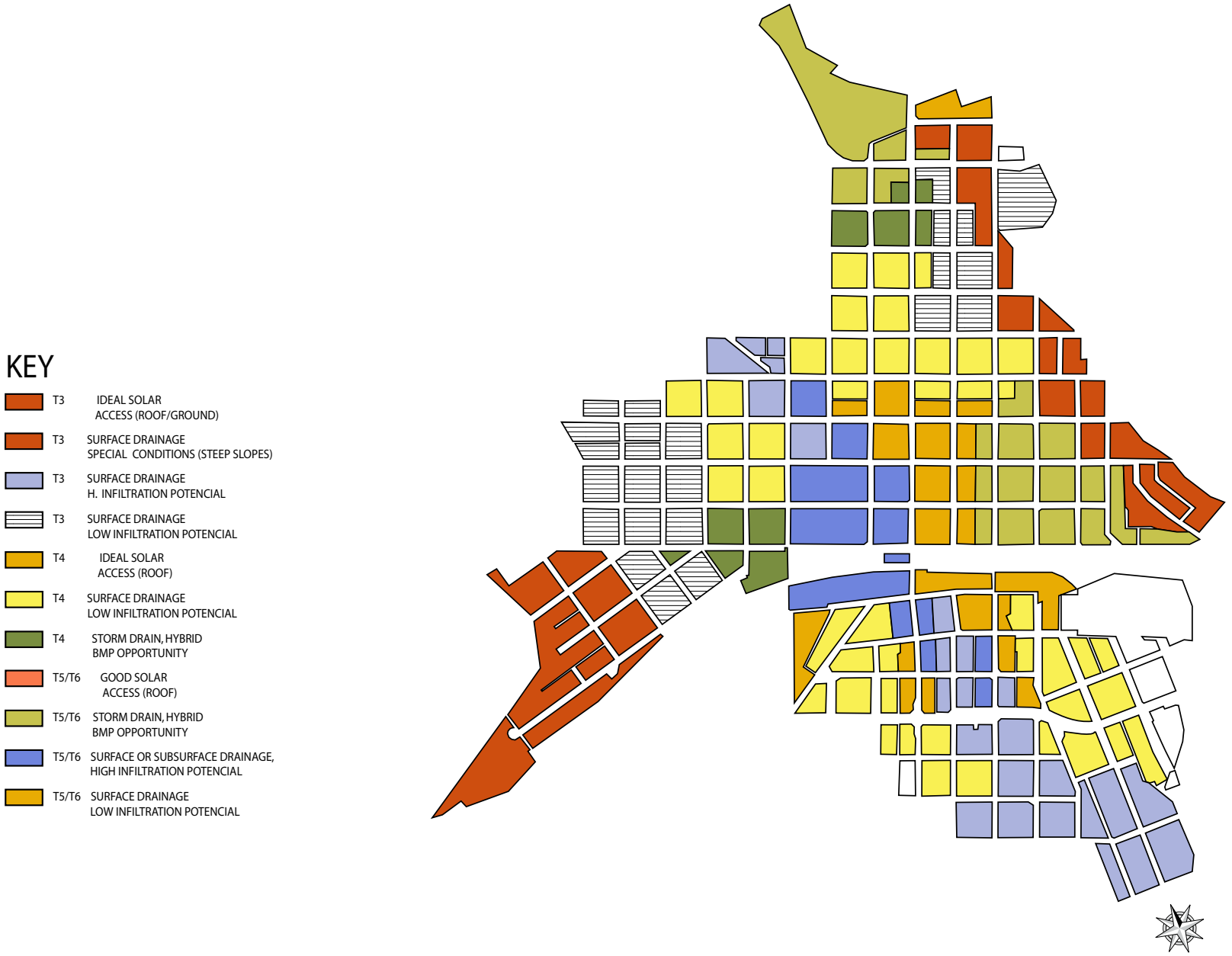
(amelanchier utahensis koehne)

Western Yarrow

(Achillea millefolium var. lanulosa)

Stormwater Management Plant List

Sherwood selected plant types that are appropriate for use in xeriscape landscape settings and that help improve water quality. These plants were also investigated in order to establish that they are able to survive winters of being buried underneath piles of snow that often contain large amounts of salt.


KEY
T3 IDEAL SOLAR ACCESS (ROOF/GROUND)
T3 SURFACE DRAINAGE SPECIAL CONDITIONS (STEEP SLOPES)
T3 SURFACE DRAINAGE H. INFILTRATION POTENCIAL
T3 SURFACE DRAINAGE LOW INFILTRATION POTENCIAL
T4 IDEAL SOLAR ACCESS (ROOF)
T4 SURFACE DRAINAGE LOW INFILTRATION POTENCIAL
T4 STORM DRAIN, HYBRID BMP OPPORTUNITY
T5/T6 GOOD SOLAR ACCESS (ROOF)
T5/T6 STORM DRAIN, HYBRID BMP OPPORTUNITY
T5/T6 SURFACE OR SUBSURFACE DRAINAGE, HIGH INFILTRATION POTENCIAL
T5/T6 SURFACE DRAINAGE LOW INFILTRATION POTENCIAL

T3 Surface Drainage with High Infiltration Potential

In this lower-density area where little to no underground stormwater infrastructure exists, Best Management Practices (BMPs) can be used to provide opportunities to reduce stormwater runoff, promote infiltration and provide for stormwater runoff treatment. Appropriate practices may include infiltration gardens, bioretention areas, vegetated swales, infiltration trenches and/or level spreaders.

T3 Surface Drainage with Low Infiltration Potential

In this lower-density area where little to no underground stormwater infrastructure exists and soil conditions do not promote significant infiltration, BMPs can be used to slow down runoff flows using on-site detention while also providing water quality treatment. Appropriate practices may include biodetention facilities, vegetated swales for conveyance, flow-through planters and detention parks.

T3 Surface Drainage with Special Condition

In this lower-density area where little to no underground stormwater infrastructure exists, soil conditions do not promote significant infiltration and steep slopes exist, BMPs can be used to slow down stormwater runoff flows. In addition to special considerations, appropriate practices may include level spreaders, check dams, riffle pools and free draining permeable paving for hardscape surfaces.

T4 Surface Drainage with Low Infiltration Potential

In this medium-density, mixed-use area where little to no underground stormwater infrastructure exists, BMPs are focused on using the available green space to slow down stormwater runoff flows using on-site detention while also providing water quality treatment. Given the slightly higher density over the T3 zones, appropriate practices may include flow-through planters, biodetention areas, pocket stormwater parks and channelized community swales.

T4 Existing Storm Drain

In this medium-density, mixed-use area where underground stormwater infrastructure exists, BMPs are focused on working with the existing infrastructure by capturing stormwater and slowly releasing it to the existing stormdrain network. These hybrid best-management practices use the available green space to slow down stormwater runoff flows using on-site detention before it is discharged into pipes. Given the slightly higher density over the T3 zones, appropriate practices may include plumbed detention planters, biodetention areas, pocket stormwater parks and plumbed community swales.

T5/T6 Existing Storm Drain

In these higher-density locations where underground stormwater infrastructure exists, BMPs are focused on relying on the existing infrastructure and using the few landscaped and hardscaped areas as a way to ease strain on the storm drain networks. These hybrid best-management practices utilize parking areas and sidewalks to collect stormwater runoff using curb cuts and grading. The planters and permeable concrete or asphalt incorporate underdrain systems that connect into existing infrastructure. These strategies reduce the peak flows from storm events and provide benefits for flood control and water quality.

T5/T6 Surface or Subsurface Drainage with High Infiltration Potential

In these higher-density locations where underground stormwater infrastructure may or may not exist and soils have high permeability, BMPs are focused on optimizing the infiltration potential of the soil by using permeable surfaces that allow water to percolate in the ground. These systems can also connect to the existing infrastructure and use planters, parking areas and sidewalks to collect stormwater runoff from streets and buildings. These strategies reduce the peak flows from storm events and provide benefits for flood control and water quality.

T5/T6 Subsurface Drainage with Low Infiltration Potential

In these higher-density locations where underground stormwater infrastructure does not exist and soil conditions provide for low infiltration rates, BMPs are limited and focus on reducing flows. Green roofs are a good way to reduce impermeable surfaces and provide for a reduction in stormwater runoff. Permeable paving also can be used to mitigate stormwater flows if site conditions allow for the surfaces to ultimately gravity drain.

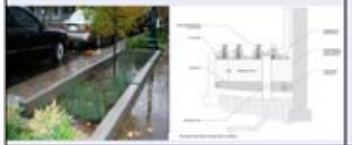
Land Development Code Rewrite — **SHERWOOD DESIGN ENGINEERS**
Flagstaff Arizona

	T1	T2	T3	T4	T5	T6	SD	Notes
Stormwater								
Vegetated Swale 	•	•	•					Vegetated swales are shallow drainage ways that employ landscaping to stabilize the soil while providing water quality treatment via biofiltration. They are designed to remove silt and sediment-associated pollutants before discharging to storm sewers and to reduce volume if soils allow for infiltration. The treatment area can be planted in a variety of grasses, sedges and rushes shrubs, while the side slopes can be planted with shrubs or groundcover.
Green Roof 					•	•	•	Green Roofs are a way of managing stormwater in urban areas with limited space for more land intensive BMPs. Green roofs are able to store stormwater in the soil medium during rain events, helping to detain runoff. Some of the stormwater will be taken up by the roots of the plants and some will be evaporated from the soil medium, reducing the amount of runoff from the roof.
Pervious Paving 				•	•	•		Pervious paving systems allow water to pass freely through interstitial space ingrained throughout the paving matrix, thereby transforming traditionally impervious surfaces. Several examples are pervious concrete and asphalt, interlocking pavers, and reinforced gravel and grass paving.
Rain Gardens 		•	•	•				Rain Gardens are flat-bottomed landscaped depressions that can be built to any size or shape. Also known as 'bioretention cells', they are designed to allow water to settle and infiltrate into the soil. They reduce the peak discharge rate from a site via detention. Water quality improvements are achieved through particle settling, nutrient uptake, and filtration as water soaks into the ground. Amended
Disconnected Downspouts 		•	•	•				In lower density residential areas downspouts should be disconnected from stormdrain systems and directed towards landscaped areas. This reduces the burden on the stormdrain network and allows runoff to slow and infiltrate before overflowing to stormdrains.

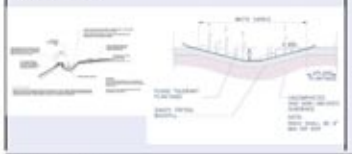
SHERWOOD DESIGN ENGINEERS — **Land Development Code Rewrite**
Flagstaff Arizona

	T1	T2	T3	T4	T5	T6	SD	Notes
Water Conservation								
Rain barrels 		•	•					Rain barrels are connected directly to downspouts to capture and store runoff for future use. Stormwater discharge is slowed down and water can be reused for irrigation. 50 gallons of storage is suggested as a minimum. Barrels must also have a cover to prevent insect and debris collection.
Cisterns 			•	•	•	•		Cisterns function similar to rain barrels by collected stormwater and storing it for reuse, but on a much larger scale. Cisterns can be stored above ground, buried below ground, or located inside of buildings. They typically store rainwater for reuse in irrigation, mechanical uses, toilet flushing, and fire prevention.
Greywater (Simple) 		•	•	•				Greywater is non-industrial wastewater generated from domestic processes such as dishwashing, laundry and bathing. Greywater comprises wastewater generation from all of the house's sanitation equipment except for the septic tank. A simple greywater system could consist of a piping network that discharges laundry water to a garden.
Greywater (Complex) 							•	In order to treat greywater to create potable or near-potable water, more complex processes are requried for purification. Systems or processes that are used include sand filtration, UV-radiation, constructed wetlands and biofilters. The City of Flagstaff has a water reclamation plant that treats greywater for re-use.

SHERWOOD DESIGN ENGINEERS — **Land Development Code Rewrite**
Flagstaff Arizona

	T1	T2	T3	T4	T5	T6	SD	Notes
Stormwater								
Vegetated Flood Plain 			•	•	•			Flood plains can be integrated with parks, playing fields or unmanaged landscapes. Frequent storm events can be detained by smaller decentralized means, while larger storm events should be directed to non priority vegetated landscapes for temporary detention.
Urban Flood Plain 					•	•		Urban hardscapes can be used for temporary storage of large storm events. Smaller events should be mitigated by decentralized means, while the larger events can be directed toward non priority spaces which are planned and designed for the temporary storage of stormwater flows.
Bioretention 			•	•	•			Bioretention is an up-land water quality and water quantity control practice that uses the chemical, biological and physical properties of plants, microbes and soils for removal of pollutants from storm water runoff. This same principle of utilizing biological systems has been widely used in the retention and the transformation of pollutants and nutrients found in agricultural and wastewater treatment practices.
Riffle Pools 				•	•	•		Connected landscapes which provide retention of runoff by integrating intermittent vertical drops and damming in a watercourse. The retained runoff is then allowed to infiltrate into the groundwater table.
Flow-Through and Infiltration Planters 				•	•	•		Flow-through and infiltration planters are landscape features that also provide stormwater runoff control and treatment. Flow-through planters are sealed on all sides and fitted with an underdrain. They only absorb as much water as soil and plants in the planter can accommodate. Once the planter is at capacity, water is then discharged through the underdrain. They are ideal for receiving roof runoff from downspouts and can be incorporated into foundation walls.
Infiltration Trench 	•	•	•	•	•			Infiltration trenches are subsurface facilities designed to provide on-site stormwater retention in areas of good infiltration by collecting and recharging stormwater runoff into the ground. Trenches filter pollutants to improve water quality and contribute towards groundwater recharge. Infiltration trenches are relatively low maintenance and can be easily retrofitted into existing sidewalk areas and medians.

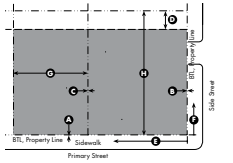
Land Development Code Rewrite — **SHERWOOD DESIGN ENGINEERS**
Flagstaff Arizona

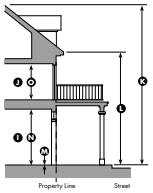
	T1	T2	T3	T4	T5	T6	SD	Notes
Stormwater								
Naturalized Channel 	•	•	•					Natural channel is a meandering, vegetated watercourse with natural banks and buffered from development zones by large uncultivated landscape.
Community Swale 				•	•			Community swales are similar in size to a natural swale, but more linear in design to conform with the adjacent development zones i.e. walkways, roadways and buildings.
Urban Channel 					•	•		Urban channels are narrow vegetated or stone lined conveyances framed by vertical stone or concrete banks abutting cultivated landscapes or hardscapes.
Level Spreader 			•	•	•			Level spreaders are structures that are designed to uniformly distribute concentrated flow over a large area to mimic natural sheet flow. Concentrated flow enters the spreader through a pipe, ditch or swale; the flow is retarded, energy is dissipated; the flow is distributed throughout a long linear shallow trench or behind a low berm; water then flows over the berm/ ditch, theoretically, uniformly along the entire length.
Road Swale 					•	•		Road swales are shallow paved or stone lined water courses integral with a vehicular or pedestrian circulation route. These conveyances often include intermittent inlets and are underlain by a collection pipe.

Form-Based Code Components

C

Town Core (TC) Standards





Key

- Property Line
- Build-to Line (BTL)
- Setback Line
- Building Area

Building Placement		
Build-to Line (Distance from Property Line)		
Front	0'	A
Side Street	0'	B
Setback (Distance from Property Line)		
Side	0'	C
Rear		
Adjacent to NC Zone	8'	D
Adjacent to any other Zone	5'	O
Building Form		
Primary Street Façade built to BTL	80% min.*	E
Side Street Façade built to BTL	30% min.*	F
Lot Width	125' max.	G
Lot Depth	100' max.	H

*Street façades must be built to BTL along first 30' from every corner.

Notes

All floors must have a primary ground-floor entrance that faces the primary or side street.

Loading docks, overhead doors, and other service entries are prohibited on street-facing façades.

Any building over 50' wide must be broken down to read as a series of buildings no wider than 50' each.

Use		
Ground Floor	Service, Retail, or Recreation, Education & Public Assembly*	I
Upper Floor(s)	Residential or Service*	J

*See Table 4.1 for specific uses. Ground floors that face the waterfront shall be nonresidential and shall not include parking, garages, or similar uses.

Height		
Building Min.	22'	K
Building Max.	2.5 stories and 40'	K
Max. to Eave/Top of Parapet	35'	L
Ancillary Building Max.	2 stories and 25'	
Finish Ground Floor Level	6" max. above sidewalk	M
First Floor Ceiling Height	12' min. clear	N
Upper Floor(s) Ceiling Height	8' min. clear.	O

Notes

Mansard roof forms are not allowed.

Any section along the BTL not defined by a building must be defined by a 2'6" to 4'6" high fence or stucco or masonry wall.

Town Core (TC) Standards

Town Core (TC):

The primary intent of this zone is to enhance the vibrant, pedestrian-oriented character of First Street. The physical form and uses are regulated to reflect the urban character of the historic shopfront buildings.

How mixed use is defined within this zone: Mixed use within this zone primarily refers to vertical mixed use where retail or commercial are on the ground floor and residential or commercial are above.

How "primary street" is defined within this zone: The primary street is always First Street.

Illustrative examples of buildings in a Town Core area

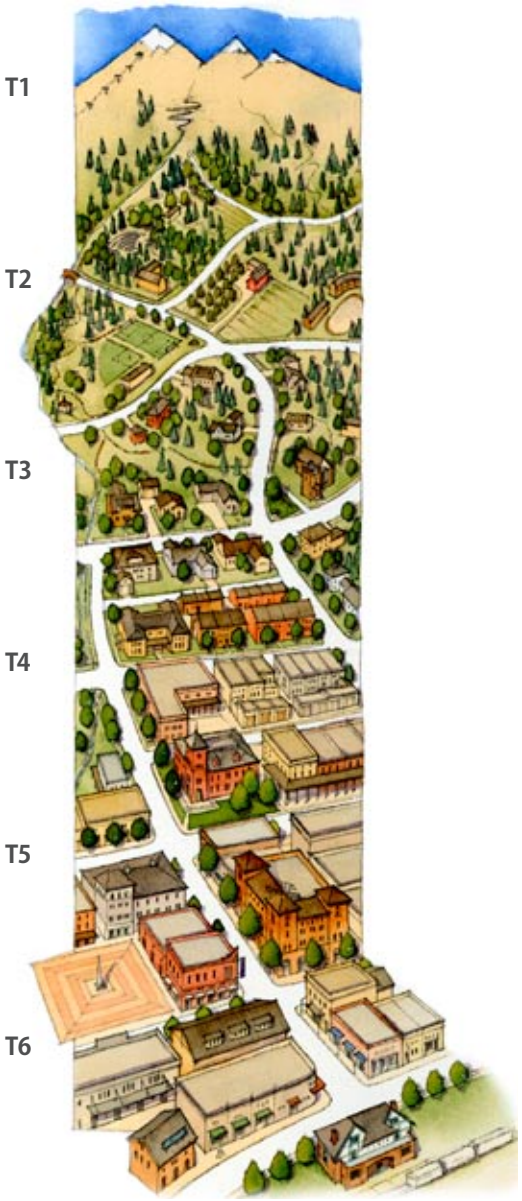
The Transect as the Organizing Principle

In a Form-Based Code, the Organizing Principle or framework of the Code is intended physical form or type of place rather than use. In this Code, the urban-to-rural Transect will provide the framework from which the Form-Based zones will be organized.

The Center for Applied Transect Studies website defines a transect as "a cut or path through part of the environment showing a range of different habitats. Biologists and ecologists use transects to study the many symbiotic elements that contribute to habitats where certain plants and animals thrive."

"Human beings also thrive in different habitats. Some people prefer urban centers and would suffer in a rural place, while others thrive in the rural or sub-urban zones. Before the automobile, American development patterns were walkable, and transects within towns and city neighborhoods revealed areas that were less urban and more urban in character. This urbanism could be analyzed as natural transects are analyzed."

source: www.transect.org



Micro-Scale Analysis

An important part of the documentation phase of the Land Development Code Rewrite was the micro-scale analysis, the documentation and analysis of the block, lot and building structure of the older neighborhoods in Flagstaff.

On July 9th, 2009, approximately 24 city staff members, local professionals and residents documented five city blocks within the Flagstaff Townsite and Downtown neighborhoods. The morning began with an introductory presentation on what we would be documenting during the course of the day. The presentation described how to fill out the forms, what to photograph, and how to document notes on the provided maps.

For the morning documentation session, the team broke up into two groups to document West Birch Avenue, blocks T3-A and T3-B. These two blocks presented two different sets of issues that the neighborhood is facing.

The T3-A block is made up of single-family houses with a number of one- and two-story ancillary structures that take inconsistent advantage of alleyways as a means to access parking. The group noted that on three lots ancillary structures are taller than the main structure.

The T3-B block provided good and bad examples of mixing both density and uses along a block. The documented lots have a variety of building types, including single-family houses (residential and commercial uses), a duplex, a small four-unit building and a commercial block building. The buildings vary from one to two stories tall and, like those on the T3-A block, take inconsistent advantage of alleyways as a means to access parking. The majority of buildings have porch or stoop frontages, although in at least one case a porch has been enclosed to form an entry vestibule. Of the lots with frontage on North Birch Avenue, only the commercial block building on lot 1 does not have its primary entrance along Birch. Instead, the parking lot fronts on to North Birch Avenue and the building fronts on to Park St.

After these blocks were documented, the two groups came together to eat lunch and discuss the afternoon schedule. During the afternoon session the team broke up into three groups to document two sections of North Leroux Street and the Downtown commercial block defined by North Leroux Street, Route 66, North San Francisco Street and East Aspen Avenue.

The Downtown commercial block that was documented represents the established commercial retail fabric of the Downtown. While the block does not have any buildings taller than 3 stories, it does represent a complete block with the majority of the lots having 100% building frontage. The exceptions are two buildings that are set back from an alley to form a pedestrian muse, a pedestrian-only street, and another lot that provides surface parking. The information gathered from the Downtown block will help to inform the minimum standards for new development in Downtown as well as any new T5 neighborhood-serving commercial centers.

The T3-C and T3-D blocks both represent single-family residential blocks that are next to the professional office corridor of North Beaver Street. These two blocks contain mainly smaller single-family houses with an alleyway buffering the west side of the street from the professional office uses that front on to North Beaver Street.

The Flagstaff Townsite, Southside and Downtown neighborhoods all presented many interesting building types to document, though the buildings do not always occur on a block with strong character or pedestrian friendliness. These instances will help inform the range of potential building types allowed in the transect-based zones of the code rewrite. A wide range of building types were found in Flagstaff ranging from single-family houses, duplexes, small apartment buildings and a variety of commercial block examples. The building types found in Flagstaff are summarized in a separate set of presentation boards.

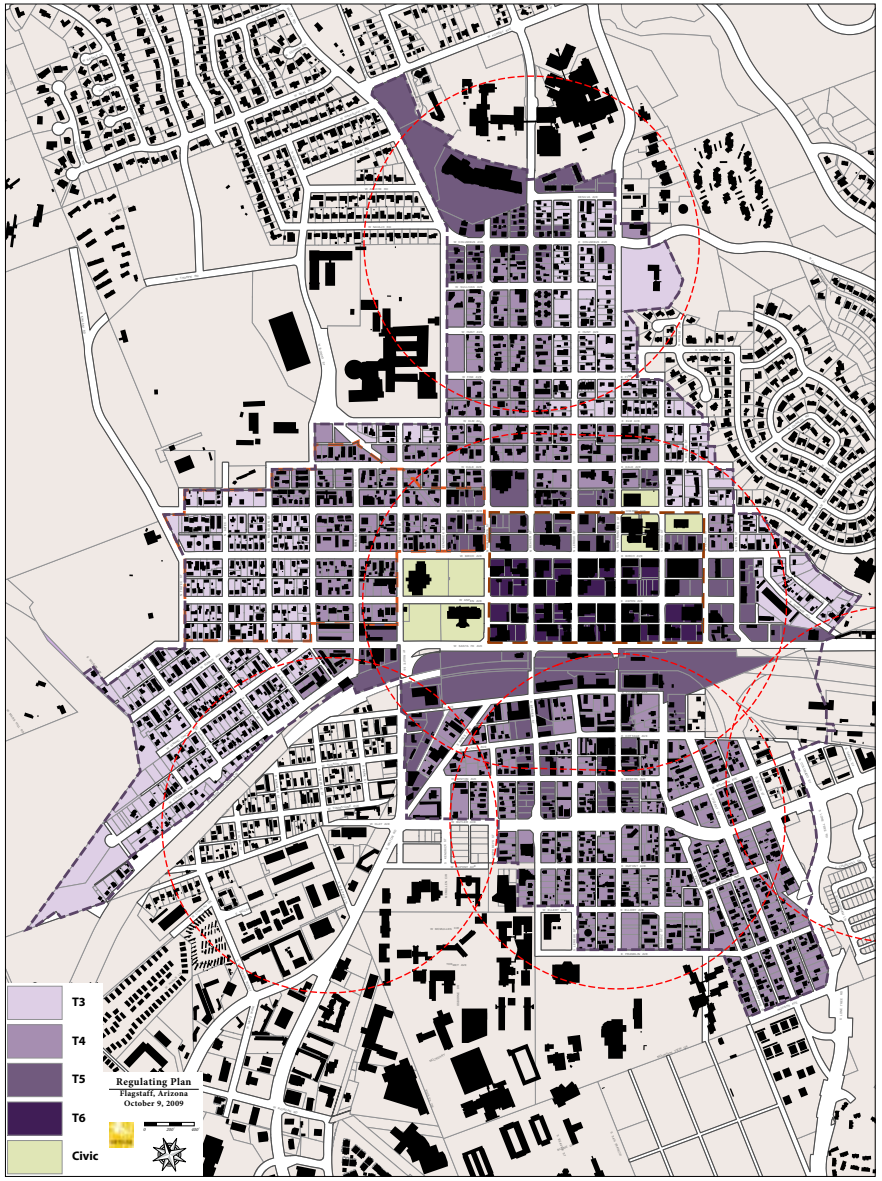
The documentation completed in during the micro-scale analysis has informed the consultant team in creating the Form-Based code.

Location map showing the blocks that were documented.

The group prepares to document the T3-B block.

The Regulating Plan

In a Form-Based Code, the Regulating Plan takes the place of the zoning map. The two may look similar on first glance, but the Form-Based zones that are represented on the Regulating Plan regulate a preferred physical form rather than a specific use.



Building Form Standards

Building Form Standards regulate building placement, building form, use type, heights, frontages allowed, encroachments allowed, and parking placement and requirements. Note the simplified land-use tables, which prevent the regulation of use from compromising the intended physical form.

Town Core (TC) Standards

Town Core (TC):

The primary intent of this zone is to enhance the vibrant, pedestrian-oriented character of First Street. The physical form and uses are regulated to reflect the urban character of the historic shopfront buildings.

How mixed use is defined within this zone: Mixed use within this zone primarily refers to vertical mixed use where retail or commercial are on the ground floor and residential or commercial are above.

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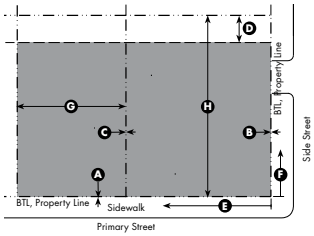
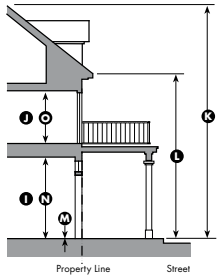
Illustrative examples of buildings in a Town Core area

Town Core (TC) Standards





Key

- Property Line
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- Building Area

Building Placement		
Build-to Line (Distance from Property Line)		
Front	0′	A
Side Street	0′	B
Setback (Distance from Property Line)		
Side	0′	C
Rear		
Adjacent to NG Zone	8′	D
Adjacent to any other Zone	5′	D
Building Form		
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Lot Width	125′ max.	G
Lot Depth	100′ max.	H

*Street façades must be built to BTL along first 30′ from every corner.

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Use		
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Upper Floor(s)	Residential or Service*	J

*See Table 4.1 for specific uses. Ground floors that face the waterfront shall be nonresidential and shall not include parking, garages, or similar uses.

Height		
Building Min.	22′	K
Building Max.	2.5 stories and 40′	K
Max. to Eave/Top of Parapet	35′	L
Ancillary Building Max.	2 stories and 25′	
Finish Ground Floor Level	6″ max. above sidewalk	M
First Floor Ceiling Height	12′ min. clear	N
Upper Floor(s) Ceiling Height	8′ min. clear.	O

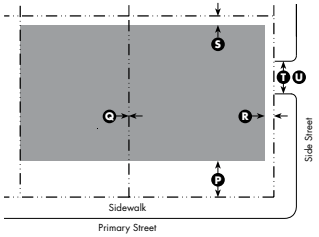
Notes

Mansard roof forms are not allowed.

Any section along the BTL not defined by a building must be defined by a 2′6″ to 4′6″ high fence or stucco or masonry wall.

The typical four-page layout of Building Form Standards for each zone. Note: these pages are from a Form-Based Code for another community.

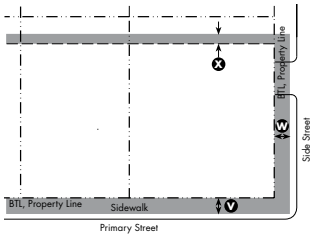
Town Core (TC) Standards



Key

Property Line

Parking Area



Key

Property Line

Build-to Line (BTL)

Setback Line

Encroachment Area

Parking		
Location (Distance from Property Line)		
Front Setback	30′	P
Side Setback	0′	Q
Side Street Setback	5′	R
Rear Setback	5′	S
Required Spaces		
Ground Floor		
Uses <3,000 sf	No off-street parking required	
Uses >3,000 sf	1 space/500 sf	
Upper Floors		
Residential uses	1 space/unit; .5 space/studio	
Other uses	1 space/1,000 sf	
Notes		
Parking Drive Width	15′ max.	T
On corner lots, parking drive shall not be located on primary street.		U
Parking may be provided off-site within 1,300′ or as shared parking.		
Bicycle parking must be provided and in a secure environment.		
Parking drives are highly discouraged along First Street and only permitted if there is no other option for access to parking areas.		

Encroachments		
Location		
Front	12′ max.	V
Side Street	8′ max.	W
Rear	4′ max.	X
Notes		
Canopies, Awnings, and Balconies may encroach over the BTL on the street sides, as shown in the shaded areas. Balconies may encroach into the setback on the rear, as shown in the shaded areas.		
Upper-story galleries facing the street must not be used to meet primary circulation requirements.		

Allowed Frontage Types *(see page 4-26)*	
Gallery	
Clearance	1′ min. back from curb line
Height	9′ min. clear, 2 stories max.
Awning	
Depth	10′ max.
Forecourt	
Depth	15′ min., not to exceed width
Width	20′ min., 50% of lot width max.

Town Core (TC) Standards

Table 4.1: Town Core (TC) Zone Allowed Land Uses and Permit Requirements

Land Use Type	Permit Required	Specific Use Regulations
Recreation, Education & Public Assembly		
Commercial recreation facility: Indoor		
< 1500 sf	MUP	
> 1500 sf	UP	
Health/fitness facility		
< 1500 sf	MUP	
> 1500 sf	UP	
Library, museum	P	
Meeting facility, public or private	MUP	
Park, playground	MUP	
School, public or private	MUP	
Studio: art, dance, martial arts, music, etc.		
< 1500 sf	P	
Theater, cinema, or performing arts	P	
< 5000 sf	P	
> 5000 sf	UP	

Land Use Type[1]	Permit Required	Specific Use Regulations
Residential		
Home occupation		
< 300 sf and 2 or fewer employees	P[2]	
> 300 sf and 3 or fewer employees	P[2]	
> 300 sf and 3 or more employees	NA	
Mixed use project residential component	P[2]	
Dwelling: Multi-Family-Rowhouse	P[2]	
Dwelling: Multi-Family-Duplex	P[2]	
Dwelling: Multi-Family-Triplex	P[2]	
Dwelling: Multi-Family-Fourplex	P[2]	
Ancillary Building	P	
Residential Care, 7 or more clients	P[2]	
Residential Care, 6 or fewer clients	P[2]	
Retail		
Artisan Shop	P	
Bar, tavern, night club, except with any of the following features	P	
Operating between 9 pm and 7 am	UP	
General retail, except with any of the following features:	P	
Alcoholic beverage sales	UP	
Floor area over 8000 sf	MUP	
On-site production of items sold	MUP	
Operating between 9 pm and 7 am	MUP	
Neighborhood market < 10,000 sf	P	
Restaurant, café, coffee shop	P	

Key	
P	Permitted Use
MUP	Minor Use Permit Required - staff review only
UP	Use Permit Required
NA	Not an allowed use

End Notes

[1] A definition of each listed use type is in the Glossary.

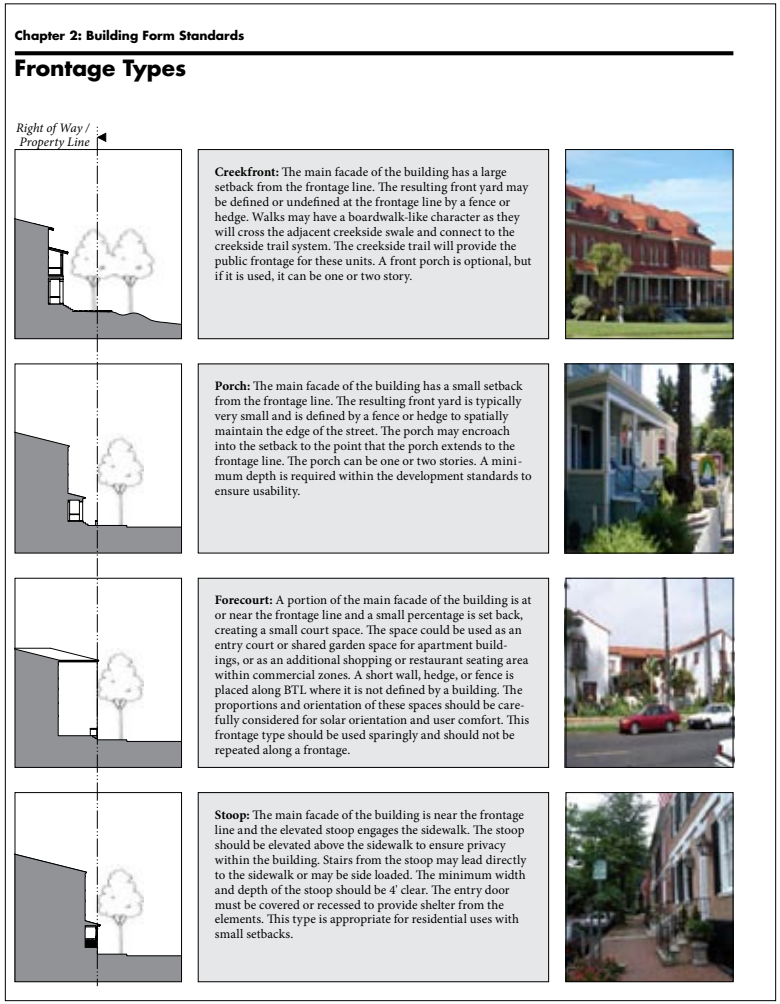
[2] Allowed only on upper floors or behind ground floor use.

[3] Body art and piercing requires use permit approval and is allowed only as an ancillary use.

The typical four-page layout of Building Form Standards for each zone. Note: these pages are from a Form-Based Code for another community.

Frontage Type Standards

Frontages regulate the appropriate transition from public to private realm. Below is a complete list of frontage types that can be included in a Form-Based Code as is appropriate to the application area or community.



Chapter 2: Building Form Standards

Frontage Types

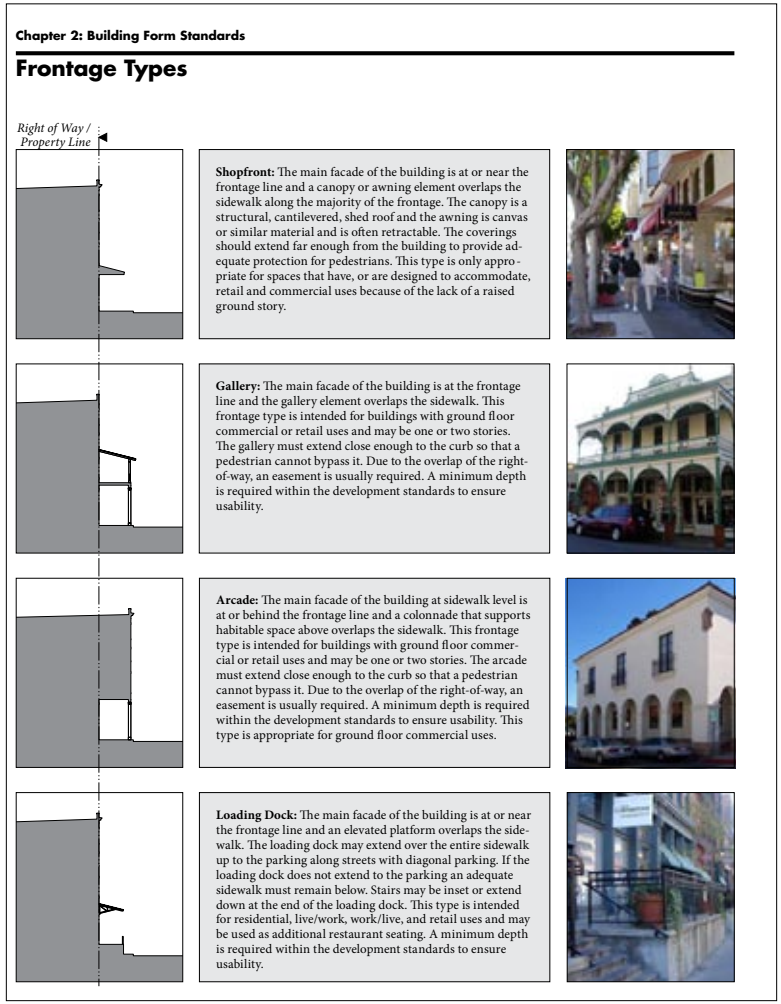
Right of Way / Property Line

Creekfront: The main facade of the building has a large setback from the frontage line. The resulting front yard may be defined or undefined at the frontage line by a fence or hedge. Walks may have a boardwalk-like character as they will cross the adjacent creekside swale and connect to the creekside trail system. The creekside trail will provide the public frontage for these units. A front porch is optional, but if it is used, it can be one or two story.

Porch: The main facade of the building has a small setback from the frontage line. The resulting front yard is typically very small and is defined by a fence or hedge to spatially maintain the edge of the street. The porch may encroach into the setback to the point that the porch extends to the frontage line. The porch can be one or two stories. A minimum depth is required within the development standards to ensure usability.

Forecourt: A portion of the main facade of the building is at or near the frontage line and a small percentage is set back, creating a small court space. The space could be used as an entry court or shared garden space for apartment buildings, or as an additional shopping or restaurant seating area within commercial zones. A short wall, hedge, or fence is placed along BTL where it is not defined by a building. The proportions and orientation of these spaces should be carefully considered for solar orientation and user comfort. This frontage type should be used sparingly and should not be repeated along a frontage.

Stoop: The main facade of the building is near the frontage line and the elevated stoop engages the sidewalk. The stoop should be elevated above the sidewalk to ensure privacy within the building. Stairs from the stoop may lead directly to the sidewalk or may be side loaded. The minimum width and depth of the stoop should be 4' clear. The entry door must be covered or recessed to provide shelter from the elements. This type is appropriate for residential uses with small setbacks.



Chapter 2: Building Form Standards

Frontage Types

Right of Way / Property Line

Shopfront: The main facade of the building is at or near the frontage line and a canopy or awning element overlaps the sidewalk along the majority of the frontage. The canopy is a structural, cantilevered, shed roof and the awning is canvas or similar material and is often retractable. The coverings should extend far enough from the building to provide adequate protection for pedestrians. This type is only appropriate for spaces that have, or are designed to accommodate, retail and commercial uses because of the lack of a raised ground story.

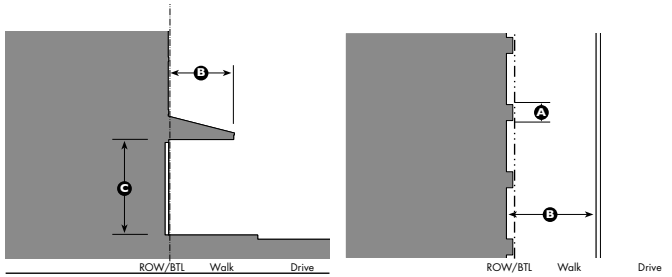
Gallery: The main facade of the building is at the frontage line and the gallery element overlaps the sidewalk. This frontage type is intended for buildings with ground floor commercial or retail uses and may be one or two stories. The gallery must extend close enough to the curb so that a pedestrian cannot bypass it. Due to the overlap of the right-of-way, an easement is usually required. A minimum depth is required within the development standards to ensure usability.

Arcade: The main facade of the building at sidewalk level is at or behind the frontage line and a colonnade that supports habitable space above overlaps the sidewalk. This frontage type is intended for buildings with ground floor commercial or retail uses and may be one or two stories. The arcade must extend close enough to the curb so that a pedestrian cannot bypass it. Due to the overlap of the right-of-way, an easement is usually required. A minimum depth is required within the development standards to ensure usability. This type is appropriate for ground floor commercial uses.

Loading Dock: The main facade of the building is at or near the frontage line and an elevated platform overlaps the sidewalk. The loading dock may extend over the entire sidewalk up to the parking along streets with diagonal parking. If the loading dock does not extend to the parking an adequate sidewalk must remain below. Stairs may be inset or extend down at the end of the loading dock. This type is intended for residential, live/work, work/live, and retail uses and may be used as additional restaurant seating. A minimum depth is required within the development standards to ensure usability.

The typical four-page layout of Building Form Standards for each zone. Note: these pages are from a Form-Based Code for another community.

Frontage Standards

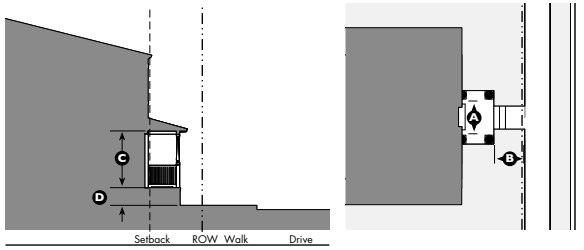


Key

ROW / Property Line
Build-to Line (BTL)
Building Area

3.03.020 Shopfront		
Description		
The main facade of the building is at or near the frontage line and a canopy or awning element overlaps the sidewalk along the majority of the frontage. The canopy is a structural, cantilevered, shed roof and the awning is canvas or similar material and is often retractable.		
Size		
Max. dist between openings	2'	A
Min. % transparency	75%	
Max. door recess	5'	
Awning		
Awning Depth	4' min.	B
Setback from curb	2' min.	
Height clear	8' min.	C
Miscellaneous		C
Residential windows shall not be used		
Doors allowed to recess as long as main facade is at BTL		
Operable awnings are encouraged		
Metal, rounded, and hooped awnings are discouraged		
Encourage shopfronts with accordion style doors/ windows or other operable windows that allow the space to open to the street		

Frontage Standards



Key

ROW / Property Line
Setback Line
Building Area

3.03.020 Stoop		
Description		
The main facade of the building is near the frontage line and the elevated stoop engages the sidewalk. The stoop should be elevated above the sidewalk to ensure privacy within the building. Stairs from the stoop may lead directly to the sidewalk or may be side loaded.		
Size		
Width, clear	5' min., 8' max.	A
Depth, clear	5' min., 8' max.	B
Height, clear	8' min.	C
Finish level above sidewalk	18" min.	D
Miscellaneous		
Stairs may be perpendicular or parallel to the building facade.		
Ramps shall be parallel to facade.		
The entry door shall be covered or recessed to provide shelter from the elements.		
Recessed entries		
Depth	4' max.	
Gates are not permitted on stoops		
All doors must face the street		
Stoops may only be 1 Story in height.		

Stoop on single family home with a medium setback engages the street

Stoop on townhouses with slightly recessed entries and a minimum setback allows the steps to engage the street

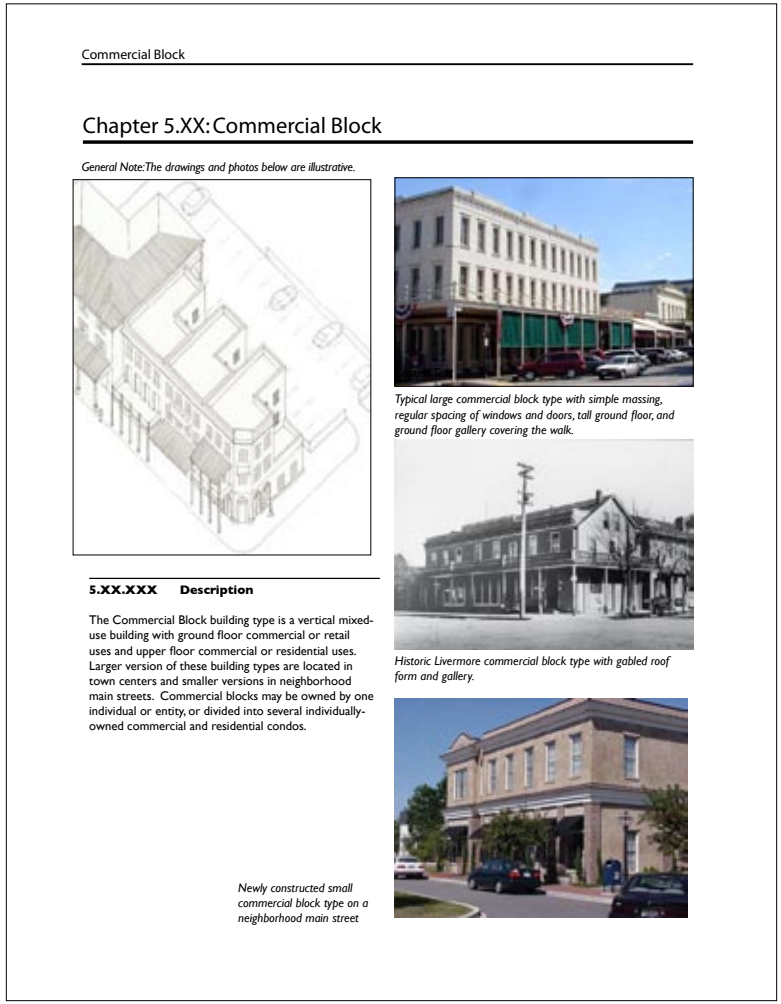
The typical layout of Frontage Type Standards for each zone. Note: these pages are from a Form-Based Code for another community.

Building Type Standards

Regulating by building type ensures that buildings of appropriate scale are built within a designated area. It also recognizes that zoning residential areas by density has not produced good results, and provides an alternative method.

List of building types to be regulated include:

1. Single-Family Dwelling
2. Carriage House
3. Bungalow Court
4. Duplex
5. Apartment House
6. Townhouse
7. Live/Work
8. Stacked Flats
9. Courtyard Apartments
10. Commercial Block



Commercial Block

Chapter 5.XX: Commercial Block

General Note: The drawings and photos below are illustrative.

5.XX.XXX Description

The Commercial Block building type is a vertical mixed-use building with ground floor commercial or retail uses and upper floor commercial or residential uses. Larger version of these building types are located in town centers and smaller versions in neighborhood main streets. Commercial blocks may be owned by one individual or entity, or divided into several individually-owned commercial and residential condos.

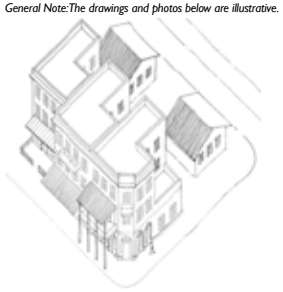
Typical large commercial block type with simple massing, regular spacing of windows and doors, tall ground floor, and ground floor gallery covering the walk.

Historic Livermore commercial block type with gabled roof form and gallery.

Newly constructed small commercial block type on a neighborhood main street

Chapter 5.XX: Live/Work

General Note: The drawings and photos below are illustrative.



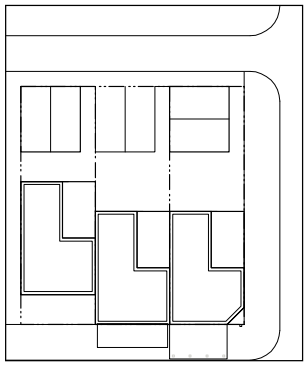
5.XX.XXX Description

The Live/Work building type consists of one residential unit above a ground floor flexible space that can be used for residential or commercial uses. Both the ground floor flex space and the unit above are owned by one person. Each mixed-use unit has its own individual entries. This building type is typically located in transitional areas between mixed-use commercial centers and residential areas. Live/work units are especially appropriate for incubating neighborhood-serving commercial uses and allowing neighborhood main streets to expand as the market demands.

Ground floor flex space with two-story townhouse above. The townhouse entry is to the far right and the ground floor commercial space entry is on the corner.

Three story corner live/work unit stepping down to two and a half stories as it transitions to single-family homes. These units provide incubator space for small, locally-owned, neighborhood-serving commercial businesses.

Live/Work



Typical Plan Diagram

Lot	
Lot Size	
Width	75' min., 150' max.
Depth	80' min., 150' max.
Size	2,000 sf per unit
Pedestrian Access	
Main Entrance Location	Primary street
Ground floor space andupper unit must have seperate entries	
Frontages	
Rooms Facing Primary Public Spaces	
Living space should front onto streets and courtyards.	
Ground floor bedrooms and bathrooms shall not front onto the primary street frontage or courtyards.	
Allowed Frontages	
Forecourt	
Shopfront	
Terrace Shopfront [1]	
Gallery	
[1] Only allowed on cross slope lots.	

Vehicle Access and Parking	
Parking spaces may be enclosed, covered or open	
Garages may be attached, detached, or tuck-under.	
Open Space	
No open space is required.	
Building Size and Massing	
Main Body	
Width	18' min., 36' max.
Height	3 Stories max.
Accessory Structure	
Width	25' max.
Depth	30' max.
Height	1 1/2 Stories max.

The typical layout of Building Type Standards for each zone. Note: these pages are from a Form-Based Code for another community.

Other Form-Based Code Elements

Thoroughfare Standards

The design of streets plays an important part in defining the character of a place, so it is important to address this in detail in the Form-Based Code, down to the exact dimensional parameters of travel lanes, sidewalks, safe pedestrian crossings, and tree placement.

Civic Space Standards

The intent of this chapter is to introduce a complete list of types and sizes of civic spaces that are appropriate in each of the Form-Based zones, as well as general design parameters for each of them.

Block and Lot Subdivision Standards

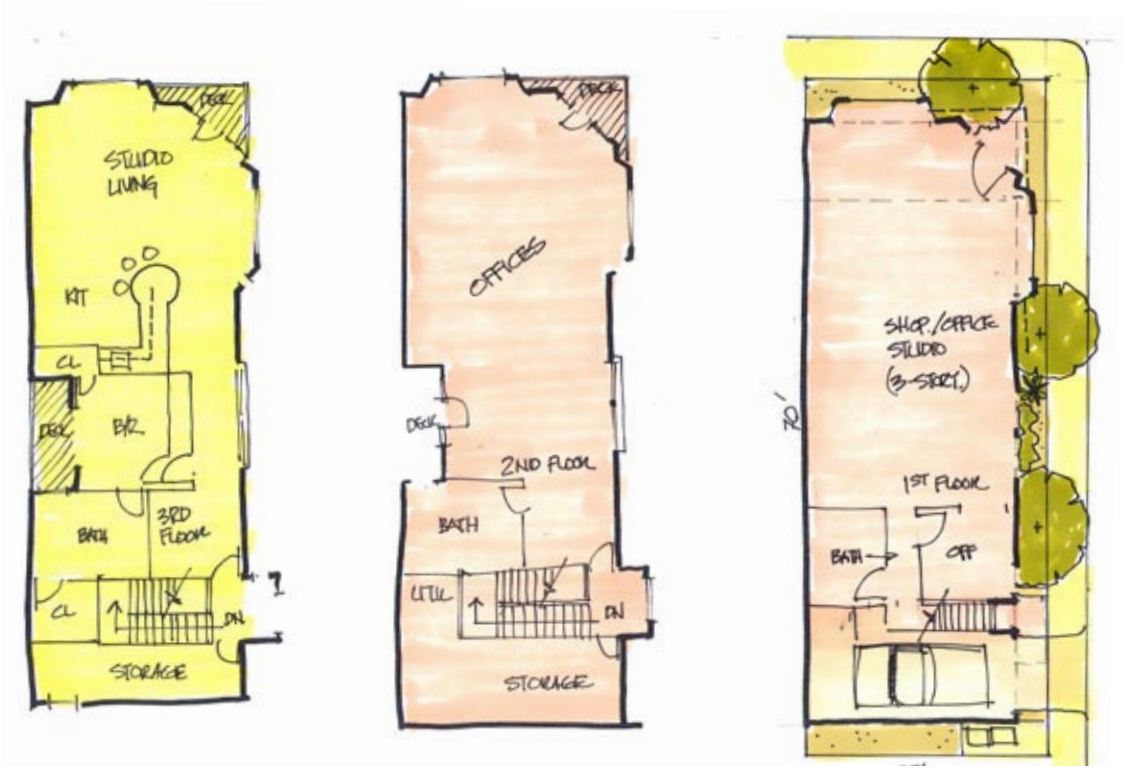
This is an important element to ensure that larger lots are broken down into a network of streets and blocks to further encourage connectivity.

Design Explorations

D

In-fill and Implementation Studies by City Staff

During the charrette, City staff worked with the consultant team to explore potential designs based on the Transect Zone regulations. In particular Ed Larson worked on possible in-fill buildings with in the Southside neighborhood and Kimberly Sharp worked on possible implementation of a Form-Based Code in the Plaza Vieja neighborhood. The work they completed at the charrette is documented in the following pages.




SOUTH O'LEARY STREET.

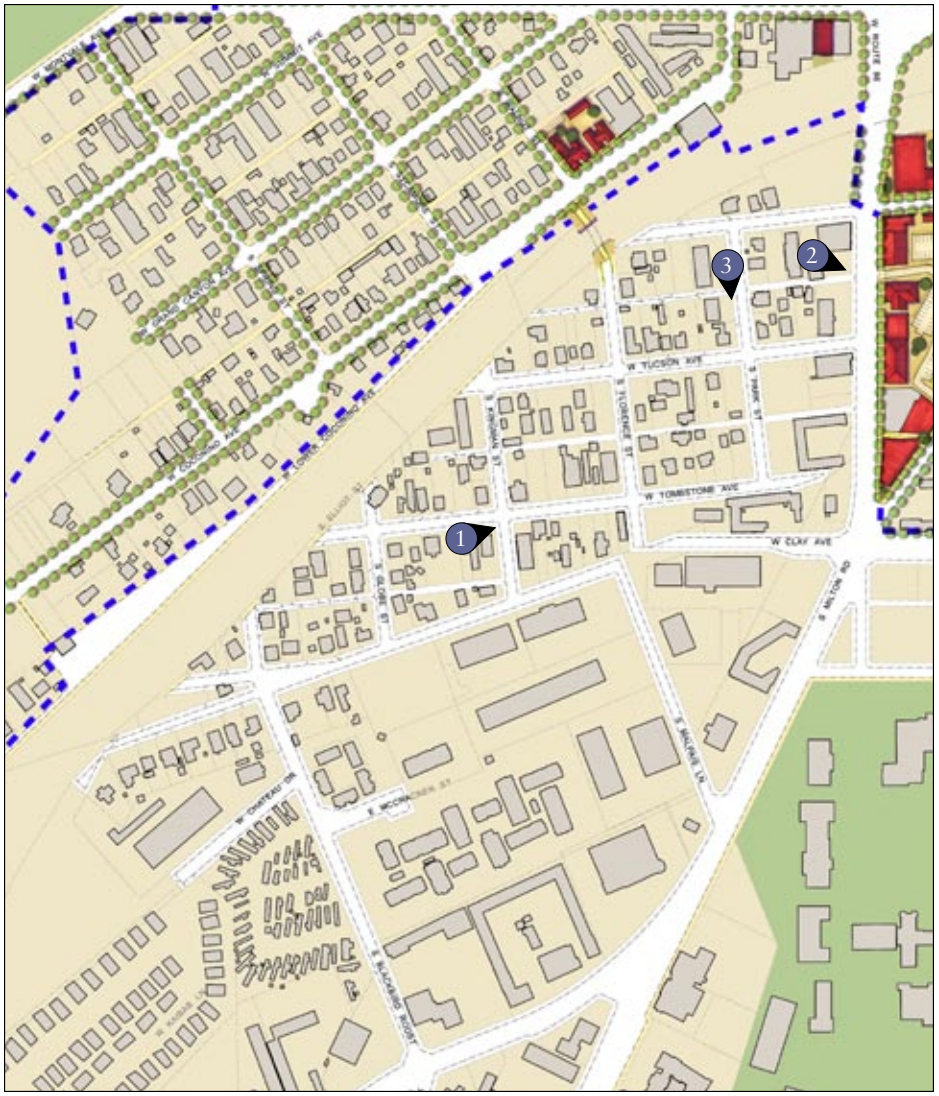

BUTLER AVE. SCALE 1:20


BUTLER AVE
3-STORY
2-2/BR
STUDIOS
2 STORY
2 B/R
STUDIO
SOUTH O'LEARY STREET


BUTLER AVE
1 B/R
ADU
2 STORY
2 B/R
2 STORY
2 B/R
BRANIGAN AVE
SOUTH O'LEARY ST


3-STORY
3-B/R
SHOP-/2 BR
ABOVE
CARD SHOP

La Plaza Vieja Neighborhood



Location map of views with in the Plaza Vieja neighborhood.

1. Neighborhood Main Street In-fill

Photograph of the existing conditions along Clay Avenue.

Potential mixed use in-fill along Clay Street.

2. Commercial along Milton Road

Photograph of the existing conditions along Tucson Avenue.

Potential redevelopment of mixed use in-fill building that fronts on to Tucson Avenue and Milton Road, with parking located off of Tucson Avenue.

3. Residential In-fill

Photograph of the existing conditions along Tucson Avenue.

Potential residential in-fill building within the Plaza Vieja neighborhood.